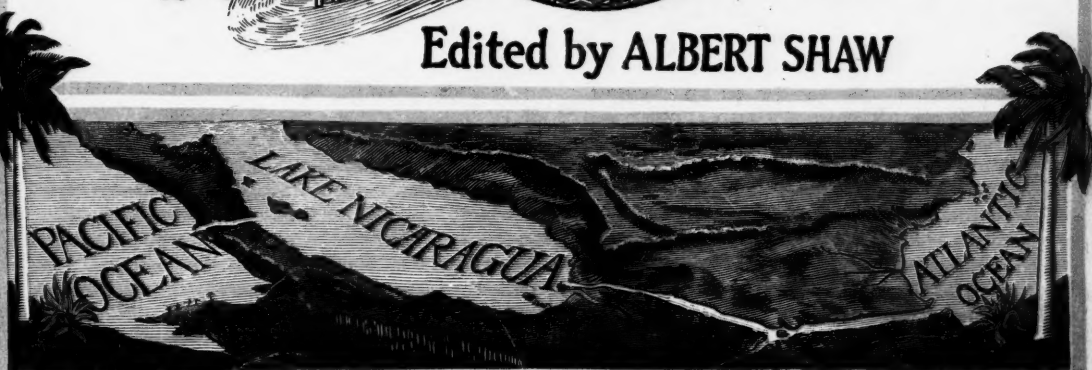


# THE AMERICAN MONTHLY REVIEW OF REVIEWS

Illustrated January 1902

Edited by ALBERT SHAW



## The Great Isthmian Canal:

### I. What the Commission Found Out

By Emory R. Johnson

### II. Congress and the Canal

The Editor in "The Progress of the World"

## Electric Trains Running Over 100 Miles an Hour

By Thomas C. Martin

Illustrated

## The Nobel Prizes and Their Founder

With Portraits

## Berthelot, Nestor of Modern Chem- istry

With Portraits

## Irrigation in the West

A Plan of Action for the National Government

By William E. Smythe

## The Good Roads Movement:

With Pictures.

### I. How the State Can Help

By Hon. Martin Dodge

### II. Burnt Clay for Roads in the West.

By Charles R. Keyes

## Charleston and Her Exposition

With the First Pictures of the Buildings

## The Educational Value of Play

By Dr. John E. Bradley

## A Tenement Settlement

By Emma W. Rogers

Illustrated

THE REVIEW OF REVIEWS CO., 13 Astor Place, New York.

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### ACCEPTING THE MONROE DOCTRINE.

JOHN BULL GRATEFULLY ADMITS THAT UNCLE SAM IS THE PROPER CUSTODIAN OF  
THE WESTERN HEMISPHERE.

From a cartoon by Homer Davenport.

# THE AMERICAN MONTHLY

## *Review of Reviews.*

VOL. XXV.

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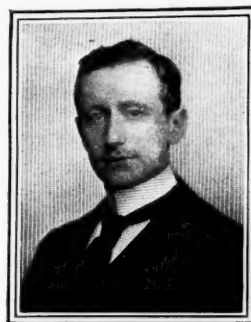
No. 1.

### THE PROGRESS OF THE WORLD.

*Close of a Progressive Year.* The most marked characteristic of the first year of the new century has been the rapid growth of friendly human intercourse and coöperation. Never before has the long-distance telephone been so much employed, and never, apart from war-news emergencies, have telegraph lines and submarine cables had so much business thrust upon them. In no previous year have newspapers and periodicals been so widely read. Never before have beneficent ideas been so ably propagated, and in no previous year has public opinion been so well instructed, so earnest, and so effective for human advancement. Inventions of every kind have made extraordinary progress. Wireless telegraphy has achieved entire success for moderate distances, and there was announced, last month, an initial and partial success in the attempt to communicate across the Atlantic Ocean by elec-

tric signals conveyed through the atmosphere. This hopeful experiment was conducted by Signor Marconi, who received at a temporary station on the coast of Newfoundland certain signals transmitted from his corresponding station on the British coast. Mr. Tesla, meanwhile, spent the year in carrying forward what he has con-

fidently assured the public would be a complete and mature success in this same field of long-distance telegraphy without wires; and other experimenters, in both Europe and America, have made valuable inventions toward a like end. These promising experiments, though not scoffed at in any quarter, have apparently caused no stagnation in the industry of constructing and laying deep-sea cables; and projects have been well advanced, during the year, for both a British and an American cable line across the Pacific, the American plan being to connect our coast with the Philippines *via* Hawaii. A few years ago, the laying of a new bit of submarine cable was regarded as a matter of uncommon interest; but nowadays the increase of the network of wires that cross oceans or connect islands with mainland goes on with comparatively little notice. The great advantage of wireless telegraphy will lie in the cheap service it promises.



Copyright, 1900, Rockwood.

MARCONI.

(From a new photograph.)



SIGNOR MARCONI.

(As drawn from life by the cartoonist Davenport.)

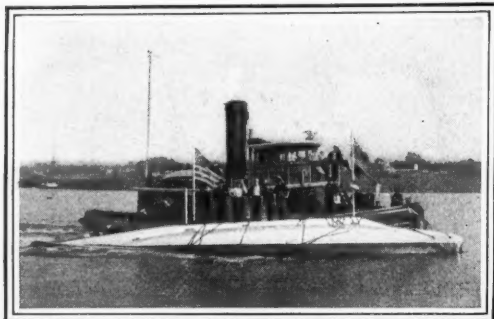
Significant in a high degree has been the progress of the past year in the study of the question of aerial navigation. A young Brazilian, M. Santos-Dumont, working at Paris, has succeeded in constructing an airship, so-called, that can be both propelled against the wind and steered successfully. Much

*Airships and Submarines.*



MAKING A LANDING,—A TYPICAL SCENE IN THE LAYING OF OCEAN CABLES.

effort, doubtless, will be required to render the airship perfect enough to be regarded as a practical invention; but that aerial navigation is now soon to be realized, there can be little doubt. Meanwhile, this memorable first year of the new century will have to its credit, not only the success of wireless telegraphy and the initiation of the dirigible airship, but also the admitted success of the submarine ship as a thing that must henceforth be reckoned with in all naval calculations. It is true, of course, that the inventors of submarine vessels have had full confidence for several years in the value of their experiments;



THE AMERICAN SUBMARINE BOAT "FULTON."

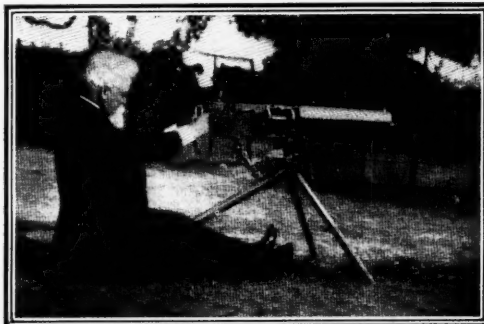
(This is the vessel of the "Holland" type that stayed under water fifteen hours during recent trials by the Government.)

but official and general acceptance of this far-reaching invention as workable, and therefore not to be disregarded, has only come about within the past year. Some very remarkable tests have been made under the direction of the United States Government with submarines of the *Holland* type; and the French Government, which

has shown more faith in the submarine idea than any other, is more than ever convinced of the profound importance of this new type of war engine. The year has brought several announcements of radical improvements in the making of guns, and further new inventions and discoveries are coming from all directions. All these new contributions to the effectiveness of warfare are plainly in the interest of peace, inasmuch as they add, each in its turn, to the horror and dread which the very idea of war now awakens in the minds of men.

*How Invention  
Promotes  
Peace.*

Every such invention takes us still farther away from the knightly and glorious traditions of martial combat. Anything that advances the cause of peace among men is to be welcomed; and nothing of late has done half so much to promote this good cause as the shattering of military ideals and traditions by the hand of the inventor. Liberty, industry, and civilization have suffered in untold measure



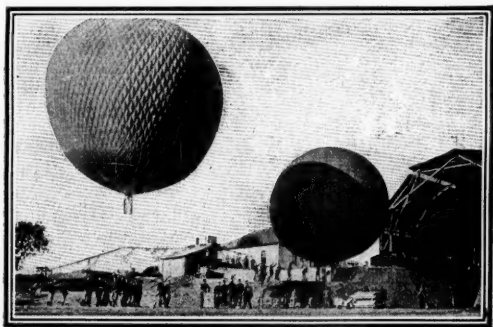
HIRAM MAXIM AND ONE OF HIS MACHINE GUNS.

(The sort of anti-climax that is fast shattering the fine old military traditions.)



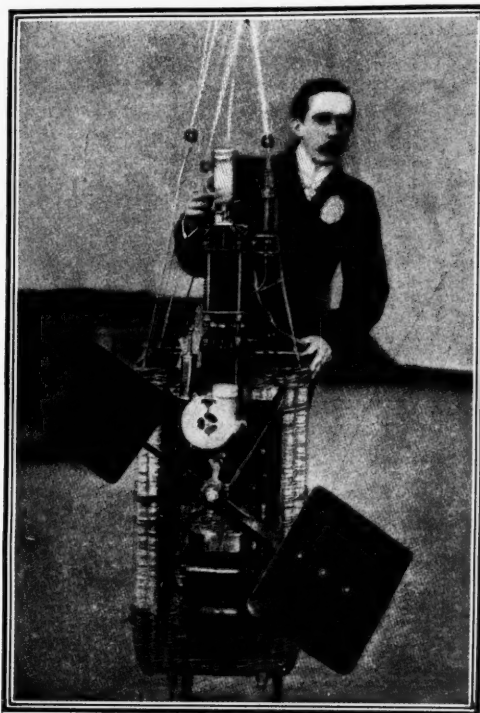
for half a century past by reason of the arrogance and dominance of professional militarism in Europe. But now, in the opening of this new century, it has dawned upon the minds of statesmen and ordinary citizens alike that militarism as a system is absolutely doomed. From this point of view, the continuance of the South African war, with all its misery and shame, has been of immense value to the world as an object-lesson. It has demonstrated the ineffectiveness of regular warfare under the new conditions made possible by such inventions as the long-range rifle, with smokeless high explosives. The Boers themselves, though evidently their leaders had some glimmering consciousness of their defensive strength, had no really intelligent idea of the course that events were destined to take. If they had known at the beginning what they know now, they could have greatly prolonged the war, and probably worn England out in the end, by a more careful avoidance of open actions and by the adoption of guerrilla methods long before they had exhausted their supplies and munitions and had allowed great bodies of their best men to be captured.

*Boers, Cubans, and the Art of War.* The present difficulty of the Boers is due to the fact that they have so scanty a population from which to draw recruits, and that they have no longer any means of obtaining ammunition or other supplies except by capture from the enemy. In short, they sacrificed too much by their resistance in



RECENT PRACTICE WITH MILITARY BALLOONS IN SPAIN.

the opening period of the war. Since Lord Roberts was destined in any case to march to Johannesburg and Pretoria, the Boers made a mistake in resisting that march at such cost of men and material. They, like the rest of the fighting world, had not sufficiently appreciated the methods employed by Gomez in Cuba, who has had no equal in our times as a successful soldier. For three years, with a comparatively



A NEW PICTURE OF M. SANTOS-DUMONT WITH HIS AÉRIAL MOTOR CAR.

small and uncertain force of patriots without military training and with scanty equipment, he held two hundred thousand Spanish soldiers in a condition of futile activity, and deadlocked the situation completely, meanwhile pursuing guerrilla tactics and fighting no battles. The result was the exhaustion of the Spanish treasury and a situation which compelled intervention and secured the emancipation of Cuba. It may be that the world will witness more than one great war in this new century; but militarism in the old sense is distinctly on the wane. We shall soon see an end in Europe of long periods of universal military service. Already the European governments are shortening the term. The thing to be desired is not the kind of training that comes with long years of the old-fashioned sort of military drill, but the development of intelligence and efficiency in the individual man, so that in case of warfare he may know how to fight for himself.

*The Lesson for the Nations.*

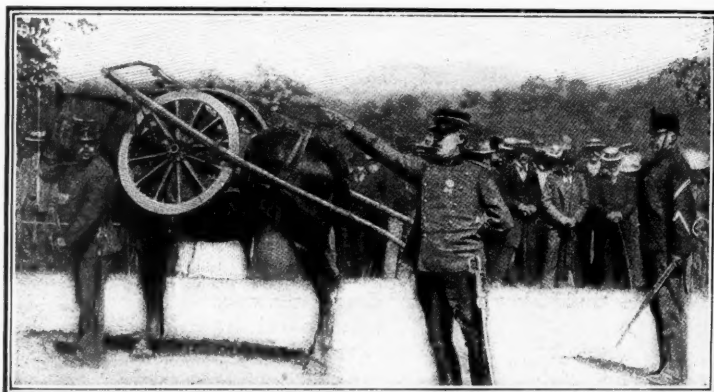
The superiority of the American soldier is due simply to the fact that the conditions of American life have given an exceptional amount of initiative and personal efficiency to the average young citizen. A far

better training for the new kind of warfare is given by the exigencies of modern life than by the drilling of the French, German, or Austrian armies. An army recruited from American railroad men, for instance, after a few months of experience, would be incomparably more formidable than the finest regular army that any European country has ever seen. The independence of the Boer republics is undoubtedly gone forever. But in losing their own independence they have shown small powers the world over that they can make themselves respected, and that they may dismiss fears of aggression. Thus, it is now evident to the Swiss that no great European power could conquer their country, and they will continue on their fortunate and beneficent national career with fresh confidence and reassurance. In like manner the Belgians, the Dutch, and the Danes will forego some of the anxieties they have felt as to their future in the presence of powerful and ambitious neighbors, in the happy discovery that they could, if necessary, defend themselves so stoutly that no neighbor, however great, would care to risk the penalty of aggression.

*The Revival  
of Subject  
Races.*

One of the most marked characteristics of the military *régime* during the past two generations has been its firm suppression of subject or minor nationalities in all attempts to keep alive their languages, customs, and racial characteristics. But now, with the decline of the prestige of militarism, the world begins to see a marked reassertion of national or

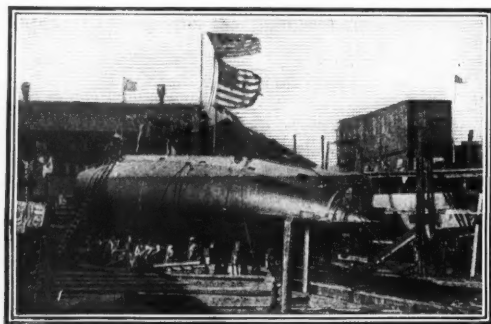
race feeling. The past year has afforded many illustrations of this striking new tendency. The tradition of military imperialism is losing its hold, while that broad world-knowledge and sympathy that we term cosmopolitanism is gaining ground on the one hand, and the sentiment of race and



TYPE OF THE MOUNTAIN CANNON NOW IN USE IN THE SWISS ARMY.

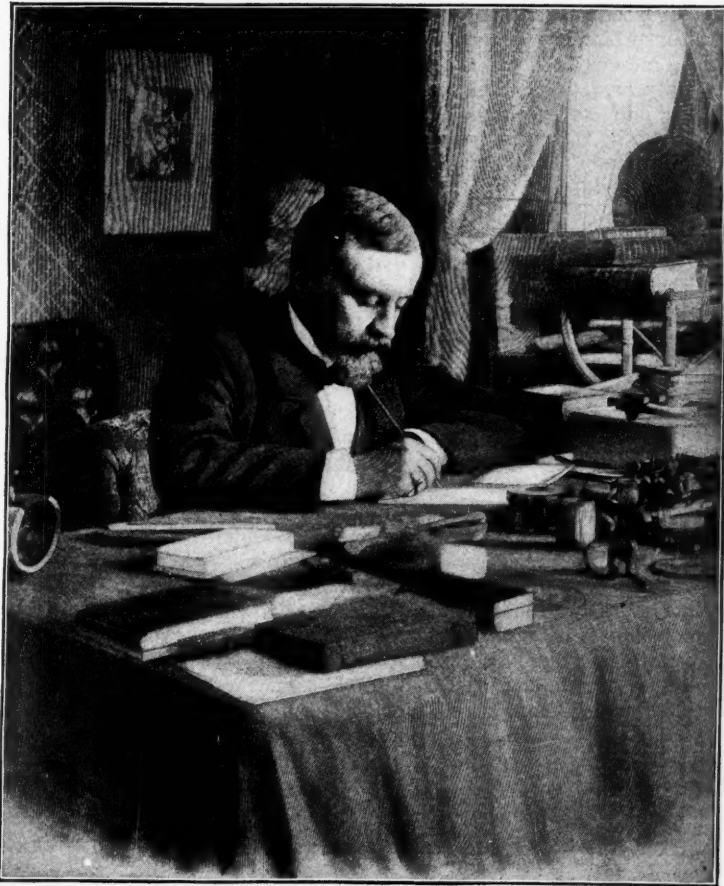
locality is gaining in a marked degree on the other. Thus, the Irish were never so little in sympathy as now with the ideals of British imperialism, and they are devoting themselves passionately to a revival of the old Irish language and of all the traditions of race and locality, while, at the same time, their large human interest in the affairs of the world was never so great as it is to-day. In eastern Germany, the attempt to exterminate the Polish language in purely Polish districts by putting it under the absolute ban in schools, churches, and courts of justice, together with the various concurrent measures by which it is sought to Germanize those regions, has of late met with a resistance so bitter and implacable that one may now safely predict the almost total failure of the Prussian policy and its early abandonment.

*How the Poles  
are Asserting  
Themselves.* The Germans have been so ruthless, and at times so cruel and tyrannical, in this business that the Russian Government itself, which holds contiguous parts of what was once Poland, has been obliged to convey hints to the Germans that their methods bid fair to create difficulties for both Russia and Austria. In other words, the partition of Poland has not destroyed the Polish racial self-consciousness, and under conceivable circumstances the Poles might rise in another struggle for independence. It is not half so likely that anything of this sort will happen, however, as that the Polish subjects of the three adjacent empires will



ONE OF THE AMERICAN SUBMARINES, "THE SHARK," BEFORE LAUNCHING.

be treated with much more deference in the future than in the past. The Poles now number about 15,000,000 people, of whom perhaps 3,000,000 are in eastern Prussia, chiefly in the province of Posen; 4,000,000 in northeastern Austria, chiefly in the province of Galicia, and about 8,000,000 in the extreme western part of Russia. The former kingdom of Poland occupied a region almost as large as France, extending from the Baltic Sea almost or quite to the Black Sea. The Austrians have practically ceased all attempt to interfere with the Poles of Galicia, who are comparatively contented in their chief towns of Cracow and Lemberg, and whose representatives appear in the Reichsrath at Vienna as a distinct Polish group. The whole tendency in the Austro-Hungarian empire is in the direction of the revival of old nationalities. The Hungarians, of course, long ago won their complete emancipation from the Austrian Germans, and the Bohemians are steadily gaining ground in their assertion of their right to use their own language and maintain their own identity as a race. These struggles by other races have naturally counted in favor of the Austrian Poles. The Russian Poles, whose capital is at Warsaw, are not so favorably situated as their brethren across the Austrian line; but inasmuch as the Poles, like the Russians, are of Slavonic stock, they seem to live more comfortably under Russian than under German rule, especially since the Russians do not antagonize their use of the Polish language. The Prussian Government, on the other hand, has been extremely relentless in its attempt to Germanize the province of Posen, and the Poles of that province have had the active sympathy and encouragement of their compatriots across the Russian and Austrian frontiers. The press of eastern Europe has teemed with this engrossing topic, and the Polish immigrants in this country are following it eagerly.



HENRY SIENKIEWICZ, THE POLISH NOVELIST, WHO IS AN ELOQUENT LEADER IN THE ANTI-GERMAN AGITATION.

*The Strife in Posen.*

The friction has never been greater than during the past few weeks. Several students have been convicted and sentenced to long terms of imprisonment for membership in the Polish National League, on the ground that this organization is treasonable in its motives. Punishment of an extreme sort, moreover, has been inflicted in one or two Polish villages on account of the refusal of certain Polish children, by direction of parents or priests, to receive instruction at school in the German language. Against the methods of the Prussian Government these Polish people of Posen have now flamed up with a spirit that reminds one of the conditions that prevailed in Ireland some years ago, when boycotting and kindred methods were at their height. Polish women everywhere are leaguering themselves together to boycott all sorts of German products, and are pledging themselves

to buy goods manufactured in France and England in preference to anything made in Germany. The Prussian Government had used every means in its power to push German colonization into Posen, and to promote the acquisition of land and property by Germans, as well as the control of trade. The Poles are now turning the tables, and are buying out every German merchant or landowner who can be made uncomfortable enough to be induced to sell and leave the country. The Polish question was debated in the Reichstag at Berlin last month with much acrimony. The great Polish novelist, Henry Sienkiewicz, has been taking a leading part in the agitation against Germany.

*Russian Opinion on the Subject.*

The subject has also been much discussed of late in Russia and Austria as well as in Germany. Influential Russian newspapers have suggested that it would be sound policy for the Hapsburg monarchy to forsake Germany and the Triple Alliance, treat all its nationalities on precisely equal terms, thus winning the favor of the Poles, and to form close relations with France and Russia, under which circumstances it might safely reduce its military expenditure. The Triple Alliance is, of course, in no immediate danger of dissolution. Nevertheless, German prestige is not likely to continue quite so imposing and dominant as heretofore, and the future is likely to bring about some radical readjustments in the grouping of European powers. Russia more than ever is the dominant factor.

*The German Tariff Issue.*

The great question before the German Government and people, of late, has been that of the proposed new tariff, the provisions of which are exceedingly offensive to both of Germany's allies. The Austrian empire especially has found in Germany a market for breadstuffs and raw materials, and can ill afford to be excluded under the provisions of the new tariff which are designed to hold the German market for the German farmer. Since both Austria and Italy, under the terms of the Triple Alliance, have impoverished themselves to maintain great standing armies for Germany's benefit, they feel that they are at least entitled to some consideration in trade matters. The pending tariff bill is, of course, aimed even more against the products of the United States than those of Germany's neighbors and allies; but the American Government and people are looking on with perfect equanimity, because they have always insisted upon making their own tariffs to suit their domestic purposes, and they have no right or reason to object to the adoption by Germany of any policy that the German people may find to

their advantage. As for the Germans themselves, the proposed new policy is not in the least due to any feeling against foreign countries. It is merely a fresh agitation of the old struggle that various countries have experienced between agriculture and manufacturing. At present, the aristocratic land-holding class is very strong in the councils of the German Government, and if it gets its way it will keep out foreign bread, meat, and other food supplies in order to get a higher price for the products of German soil. This will increase the cost of living of the industrial population and add a new handicap to German manufacturing at a time when German industry is suffering in the markets of the world from the enterprise of America and from the strenuous effort of the English to regain lost ground. Germany has been going through a period of sharp financial and business reaction, with many failures, many idle mills and factories, and much resulting poverty and distress. Under such circumstances, the industrial elements are naturally the more opposed to tariff changes that would increase the price of food. The Reichstag adjourned on December 12, after having referred the tariff bill to a committee of twenty-eight members, and the session will not be resumed until January 8. Meanwhile, it is understood that about twenty members of the committee are in sympathy with the general purposes of the bill. M. De Witte, the great finance minister of Russia, is reported to have said of the German tariff bill that when boiled down it means to Russia: "You strike my agriculture and I will hit your industry." In other words, it is understood that Russia will retaliate at once if the German bill becomes a law. The German Socialist leader, Eugene Richter, declares that Russia's position in a tariff war is superior, because the Russian Government can act instantly, as no parliamentary processes are necessary.

*Germany and America.*

A few years ago, American matters were of very little interest or concern in Europe; but all that has been changed. President Roosevelt's Message attracted the keenest attention in Germany, where its protectionist tone was promptly seized upon by the advocates of the pending bill as a fresh evidence of the so-called "American danger." The prospect that the opposition leaders like Bebel and Richter will endeavor to prolong the debate through many months, and to use parliamentary tactics to obstruct the bill, has led the government to study Speaker Reed's famous rules for dealing with parliamentary obstructionists. There is frequent expression, of late, both in Europe and America, of the opinion that Germany is seeking





A TYPICAL GERMAN CARTOON ON THE UNITED STATES, THIS ONE BEING ENTITLED "THE PAN-AMERICAN CONGRESS," AND IMPLYING THE IDEA THAT UNCLE SAM IS USING THE MONROE DOCTRINE AS A MEANS TO BRING ALL THE AMERICAN REPUBLICS UNDER HIS CONTROL.

UNCLE SAM: "It is hard to bring 'em all under one hat!"—From *Kladderadatsch* (Berlin).

to gain—first, coaling stations, and subsequently, larger territorial possessions, in South America. All this has been explicitly denied by the German ambassador at Washington on authority from his home government. The position of President Roosevelt and the authorities at Washington on the subject of the relations of Europe to South America is a very clear and definite one. It has long been the point of view of the United States that the western hemisphere is destined to belong exclusively to a series of independent republics; and that no territory now belonging to such a republic can be permitted to become a European possession, while no existing colony or possession of a European power may be transferred to another European state. This doctrine is not altogether relished in Europe, but it is for the best interest of the whole world, and it will not be modified.

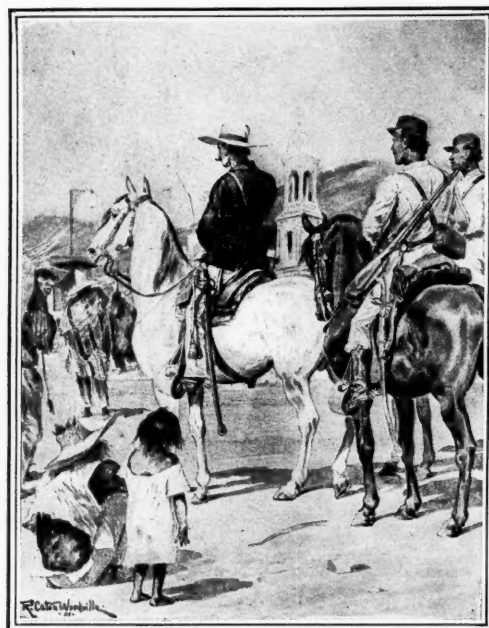
*German Colonists in South America.* There have been many allusions, during the past few weeks, in the newspapers to the large number of German colonists in southern Brazil and in the Argentine Confederation; and it has been declared that Germany proposes to acquire through such colonization the ultimate control of a large and fertile territory in those parts of South America.

Such calculations have failed to reckon with the one factor that is most important of all,—namely, the disposition of the colonists themselves. Very recent information from sources to which we attach the highest credit makes it clear that the German colonists in South America have no more thought of helping to establish colonies for the German empire than have the Germans in the United States. They are the last people in the world upon whom the German imperial government should rely for assistance in the carrying out of its supposed South American ambitions. They are destined to become a highly important element in the maintenance and development of South American independence and republicanism. The general position of the American republics is likely to be strengthened not a little as a result of the Pan-American Conference that still remains in session in the city of Mexico. Whether or not this conference should succeed in adopting any project of arbitration, it will at least have done a great deal to give new life and currency to those policies and sentiments that ought to be entertained in common by all the American countries. Such sentiments have been expressed repeatedly, since the conference assembled at the city of Mexico, by gentlemen authorized to speak for the various American republics.

*Friction in Farther South America.* It is most regrettable that South American states are so hampered in their progress by political instability and by unsettled boundary questions. Thus, old troubles between Chile and the Argentine Republic, which it was hoped a year or two ago had been put in the way of final settlement, have of late flamed up into a dangerous dispute; and both countries, last month, while exchanging carefully phrased diplomatic notes, were making strenuous preparations for war. The Argentine was thoroughly aroused, and private citizens were vying with one another in equipping troops and offering money supplies and services to the government. More than a hundred thousand troops were reported to be armed and in readiness for action. This popular uprising in the Argentine was apparently in the defensive rather than the aggressive spirit. For many years, Chile's attitude toward her neighbors has been arrogant, and her ambitious designs are regarded in South America as comprising the successive conquest of every country in the western hemisphere. The immediate dispute has to do with a portion of the boundary line, and with alleged violations of the agreement not to erect fortifications on the Straits of Magellan. Chile has a navy, an army trained by German officers, and a large income derived from the wealth of the provinces withheld by her from Peru in violation of treaty. It is not very strange, under all the circumstances, that Argentina, Peru, Bolivia, and other of the South American states should have been so earnest, through their representatives in the Pan-American Con-



UNCLE SAM TENDERS HIS GOOD OFFICES AS PEACEMAKER.  
From the *Tribune* (New York).



THE INSURRECTION IN COLOMBIA.—AN OFFICER READING PROCLAMATION.

ference at the city of Mexico, to secure an arbitration treaty under which this troublesome neighbor could be compelled to submit pending questions to an impartial tribunal, to be settled on their merits. These quarrels between neighboring states have been terribly destructive in the history of South America, and, taken in conjunction with frequent revolutions and civil wars, are quite enough to account for the slow development of the white population and the comparatively low state of civilization, agriculture, and industry. Thus, even though, as it seemed probable, the immediate difficulties between Chile and Argentina could be patched up without bloodshed, the strain of warlike preparation has been seriously distracting and harmful.

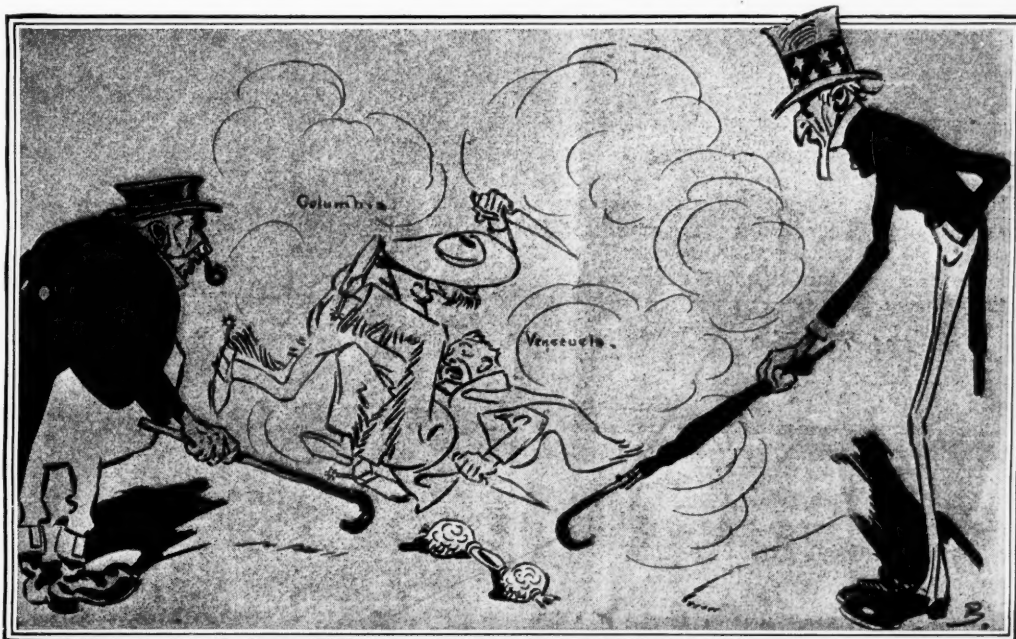
*Strife in Nearer South America.* As to the effects of revolutionary and civil struggles, the present condition of Colombia and Venezuela affords shocking illustration. Thus, it is reported that the civil war in Colombia during the past two years, to which the outside world has given comparatively little attention, has already cost more than fifty thousand lives. It has absolutely paralyzed the business of the country, and the people who are not fighting are idle. The arbitrary actions, now of the government, now of the insurgents, make commercial operations impossible; and the

whole country is impoverished. Most of the South American governments are in the hands of so-called "Liberals," while Colombia for years has been under a clerical and conservative government that has objected to taking its chances at the polls, and has therefore continued in power without going through the form of holding elections. The Liberals are simply contending for the ordinary rights of popular government. These insurgents have the active sympathy and support of the present government of Venezuela, which happens to be Liberal in the sense of its being opposed to ecclesiastical domination, though otherwise an arbitrary and reckless dictatorship. The close relations between the government of Venezuela and the revolutionists of Colombia have naturally brought about a condition of strain between the two governments that would have led to war weeks ago but for the fact that both are too fully occupied with revolutions at home to indulge in the luxury of foreign war. South America has seldom known a more offensive type of dictator than General Castro, who now calls himself President of Venezuela. Prominent citizens who have ventured to criticise his conduct are crowded into foul prisons, and something like a reign of terror exists. Revolution-

ary plots are thickening about Castro's head, but it is to be feared that Venezuela may experience bloody scenes like those through which Colombia has been passing before Castro can be dethroned.

But, meanwhile, Venezuela's disregard of outside obligations has made it probable that Germany will seize her chief custom-house (at La Guayra) and proceed to collect what she regards as due her citizens. If Venezuela's attitude toward this claim were different, the United States might very properly request that the amount due should be determined by arbitration. But Venezuela's behavior, in so far as the facts are known, has been quite as bad as that of Turkey had been when the French fleet sailed to Mitylene. Our Government has therefore allowed it to be understood plainly that it would not interfere in the matter if Germany should strictly limit its action to the collection of the amount due and should then withdraw. But our Government would not permit the acquisition by Germany of any portion of Venezuelan territory, nor an indefinite lingering there under the guise of temporary occupation. Germany is said to have consulted our State Department, last month, to avoid misunderstanding.

Germany's  
Squadron at  
La Guayra.



THE UNFRIENDLY BROTHERS.

Have a care! They have found some "interests."

(A German suggestion that England and the United States are trying to profit by the troubles in South America.)  
From *Kladderadatsch* (Berlin).



COMMANDER HENRY M'CREA, U.S.N.  
(Commanding the *Machias* at Colon, Colombia.)

Even admitting the fact that the Venezuelan Government is extremely culpable in delaying to pay German citizens certain sums of money that are due, it would be somewhat regrettable, from the standpoint of the United States, that German warships should make seizures and reprisals in American waters at this particular moment. When private German citizens go to an unstable country like Venezuela to invest their capital, whether in public securities or in railroads or other enterprises, they go with their eyes open, and are supposed to balance the chance of loss against the chance of large profits. It would be regarded in this country as a friendly act on the part of Germany not to proceed by force as a debt-collector for private individuals, but to allow the matter to rest until Venezuela has emerged from its present struggles. Germany's conduct looks a little too much like the seeking of a pretext for meddling in the western hemisphere, and especially like seeking a pretext for getting something for her navy to do in order to influence the Reichstag and public opinion in favor of the Emperor's demand for more ships. Meanwhile, our Atlantic squadron has been ordered to Venezuelan waters, where it will give close attention to the performances of the German squadron.

Although the bloodiest actions of the Colombian civil war have been in the main portion of the country, and not on the neck of land that forms Colombia's state

of Panama, the factions have managed to keep the isthmus in a state of much disturbance, and the United States navy has been obliged from time to time to protect the Panama Railroad, in accordance with the obligations long ago assumed by this country. Both sides have been disposed to show respect for the presence of Uncle Sam on the isthmus, and by a sort of common understanding they have adopted the plan of ceasing to shoot at one another when trains are passing. The news to this effect last month impressed the American cartoonists as having a certain comical aspect. It would be far better for all interests, however, if the fighting men of both factions were expelled from the isthmus and Uncle Sam remained in occupation on behalf of the peaceably inclined. The presence of the United States at the isthmus ought to have a soothing effect upon both Colombia and Venezuela.

*The Kaiser's Alleged Ambitions.* It is not to be ignored that highly intelligent European writers in the English, French, Austrian, Italian, Russian, and even the German, newspapers and periodicals continue to declare that, in spite of protestations to the contrary, Germany has formed the most deliberate and unshakable intention to acquire large interests in South America. It must be borne in mind that the Germans are not only a nation of marvelous enterprise and commercial talent, but that they are studious and well-informed beyond the people of any other nation. Better than any other foreigners, they know precisely what is going on in the different South American countries. They have a great



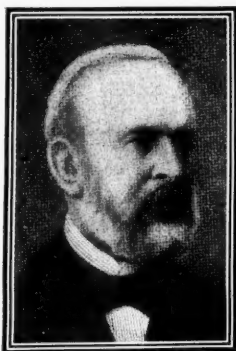
UNCLE SAM: "Have your scrap, boys, but don't disturb me!"—From the *World* (New York).



surplus population, moreover, and they must continue to overflow in the future as in the past. The German people are increasing far more rapidly than those of any other important European nation, with the possible exception of Russia. The Russians, however, have vast contiguous territories to occupy, and they have now secured the productive expanses of Manchuria in addition to the almost illimitable farming areas of Siberia. For many years, German emigration has found its chief destination in the United States. About six million people have come from Germany to this country; and they, with their descendants, now constitute a very large element of our total population. Germany will soon have sixty million people at home, and will be gaining population

by excess of births over deaths at the rate of almost a million a year. It is the general European idea that Germany will, as a matter of government policy, endeavor to divert the stream of migration from North America to certain portions of South America; and in some quarters it is thought that Venezuela and Colombia, with their immense territories, scanty population, and undeveloped resources, would afford Germany a better opportunity than any other part of the world for colonization with a view to the future extension of the German empire.

*The More Germans in South America the Better!* It is pointed out that a large influx of population might in the course of time gain the balance of power in these two republics, exhausted as they are by internal strife. There is,



PROFESSOR VON RICHT-HOFEN.

(Famous German geographer, who has received the imperial gold medal for science as a reward for his maps of China made for the German expedition. Similar talent is employed by Germany in studying South America.)

common in Germany, however, a false inference from this reasoning. It omits to take into account the preferences of the German colonists themselves. There is not the slightest feeling in the United States of opposition to a large movement of desirable European colonists into the South American republics. Germans have excellent political capacity, even though they are not allowed much liberty under the system now existing in the Fatherland. They make admirable citizens of the United States; they form much the largest element in the Swiss republic; and they would contribute fresh elements of positive strength to any of the South American republics. A million Germans in Colombia, and another million in Venezuela, would turn the scale in both of those distracted commonwealths in favor of law, order, peace, liberty, education, industry, honest administration, public credit, and respectable membership in the family of nations. A million good German settlers would ally themselves with the best liberal elements already existing in these republics, and would prepare the way for an era of wonderful South American progress. But it is wholly fallacious to suppose that these German settlers would have the disposition, even if they had the power, to bind and deliver to the German Kaiser either one of these republics as an imperial possession. The course of history in the western hemisphere is not destined to run that way. It would be quite as futile for Germany to undertake to annex South American republics as it was for the French and



MOVE FOR MOVE.—From the *Herald* (Boston).

Austrians to attempt the subversion of the republic of Mexico. German settlers in South America will simply help to make strong and real republics out of weak and nominal ones.

*Ratification of the Hay-Pauncefote Treaty.* Events at Washington are shaping themselves toward final conclusions on the subject of an isthmian canal.

It was thought in some quarters that England might object to the construction of a canal by the United States because of certain stipulations contained in the Clayton-Bulwer Treaty with reference to a project that was contemplated half a century ago. All obstacles from that quarter were removed, however, by the signing of a treaty in November, as mentioned in these pages last month, which distinctly sets aside the Clayton-Bulwer convention. This new treaty, signed by our Secretary of State and the British ambassador at Washington, contains a variety of stipulations requiring the United States, after it has built its canal, to give to all other nations, both in peace and in war, exactly the same rights in the actual use of the canal that it reserves for itself. It is well known that a great many Senators thought that our State Department should simply have secured an abrogation of the Clayton-Bulwer Treaty. Nevertheless, the new convention was ratified on December 16 by a vote of 72 to 6. The text of the treaty does not quite bear out the popular idea of a canal under absolute American control, inasmuch as we have gratuitously, in advance, pledged ourselves never to exercise control in our own interest. On some accounts it would have been much better to have had a simple declaration by Congress of its intentions as to the equal use of the canal by all nations, copies of such declaration being transmitted to all foreign governments through diplomatic channels. So far as we are aware, there is no other instance in all the history of the world in which a government has proposed to take the money of its citizens by taxation for the construction of the most costly of all its public works, while pledging itself in advance that all other nations, under all conditions and circumstances, without incurring any of the expense or risk, shall share in the results as freely as if they themselves were in ownership and control. The simple fact, however, is that the people of the United States seem perfectly willing to do this magnanimous thing.

*The Canal and Its Control.* The United States will obtain by purchase or perpetual lease from Nicaragua and Costa Rica a strip of land several miles wide on either side of the line of the canal. Whether or not in the technical sense this strip is annexed and comes under our

sovereignty, it will be virtually American soil and under our flag. In our opinion, it will never need to be fortified or to be used in any defensive or offensive military or naval operations. The canal will be a great convenience, however, to our Navy Department in transferring warships from one ocean to the other; and this facility of transfer will enable us to get along with a somewhat smaller navy than would otherwise be needed. So far as military and naval advantages are concerned, the canal will naturally serve our interests more directly than those of other nations, and we can doubtless afford to be generous. Future generations of Americans will, of course, deal in their own way with this treaty, as with all others. Treaties that merely express a policy, even though perpetual in their terms, can in practical effect bind only a single generation of men. It is understood that no difficulties whatever will be had by our Government in completing suitable arrangements with the governments of Nicaragua and Costa Rica. Prof. Emory R. Johnson, of the commission which has now completed its great report upon the engineering and other aspects of the canal question, has prepared for our readers an article which we publish in this issue of the REVIEW explaining the work of the commission and summing up its results.

*Early Action Expected by Congress.* "It is the general opinion at Washington that Congress will accept the main conclusion of the commissioners, and will this winter adopt the Nicaragua route and appropriate money and authorize the beginning of construction. There are some able engineers who still hold to the opinion that it would be wiser and better to buy out the French Panama company and finish the work it has begun. But it has not hitherto been found possible to deal advantageously with this company. Furthermore, there are some marked advantages in the Nicaragua route, to which Professor Johnson's article calls due attention. Of all the great changes that it remains for the hand of man to make in the geography of the earth, this isthmian canal is undoubtedly the most important in its bearings upon trade and commerce, and upon the intercourse and progress of the nations. It will have a most vital influence upon the future of the peoples and countries on the coasts of the Pacific Ocean that are destined to have so dominant a place in the history of the twentieth century.

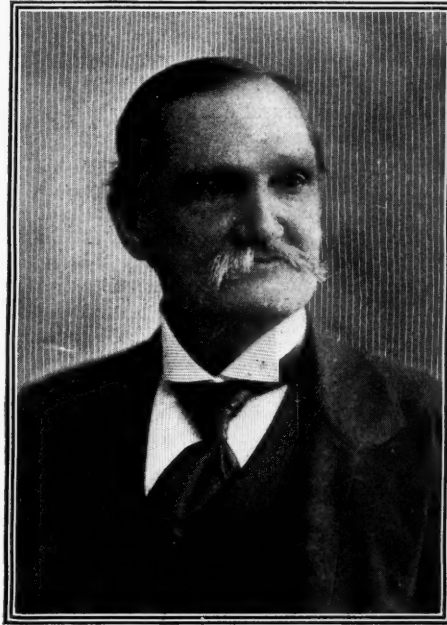
*The Revised Hepburn Bill.* Before Congress adjourned for the holidays, the House Committee on Interstate and Foreign Commerce put its finishing touches upon the bill of its chairman, Mr. Hepburn, and ordered it to be reported.

It will accordingly be pressed forward as one of the first measures to engage the attention of Congress after the resumption of its work in the present month. The Hepburn bill, in brief, authorizes the President to acquire control of the necessary territory in Costa Rica and Nicaragua for a ship canal from a point near Greytown, on the Caribbean Sea, by way of Lake Nicaragua, to Brito, on the Pacific Ocean; and it further authorizes him, when the territory has been secured, to direct the Secretary of War to dig the canal and make terminal harbors. Furthermore, the bill appropriates the sum of \$10,000,000, in order that the President and Secretary of War may have something in their pockets with which to set forth on the first stages of the business. The Secretary is authorized to enter into a contract or contracts to the aggregate amount of \$180,000,000. This measure, with such changes as may be made in it during its discussion, is likely to become a law. In that case, Secretary Root, in addition to his other great administrative tasks, will find himself in charge of the construction of the Nicaragua Canal.

*Secretary Root May Have to Build the Canal.* At present, besides the primary work of the War Department, — namely, the administration of the affairs of the army, — Secretary Root has under his direction the reconstruction of Cuba and the control of the Philippines. In each one of these great undertakings, the Secretary of War has shown wisdom and ability of a very high order. He has gained the confidence and respect of the army to a very unusual degree; he has managed the affairs of Cuba with results more favorable than anybody could well have expected; and his relation to the work of pacifying and governing the Philippine Archipelago has shown a statesmanlike grasp. If it should now fall to his lot to have the active supervision of constructing the Nicaragua Canal, the country would regard the enterprise as in strong and competent hands. The conditions would seem to be highly ripe for energetic action. There are no diplomatic questions to cause further delay, the financial resources of the Government are ample, and the engineering problems have been worked out by the distinguished experts of the commission with great skill, and with a thoroughness rendered possible by the liberal appropriation of the Government. Furthermore, there has been great advance in the art of canal-making, and with the powerful machinery now used for excavation a ship canal can be constructed much more cheaply and much more rapidly than would have been possible twenty, or even ten, years ago. For other considerations, however, touching this subject we must refer to Professor Johnson's article.

*The Cuban Election.*

Cuba was preparing, last month, for the choice of presidential electors and a lawmaking body on the date fixed by the War Department, — namely, the last day of the year. It seemed probable that Mr. Estrada Palma, who was the candidate of General Gomez



MR. TOMAS ESTRADA PALMA.

and of a great majority of the best members of the convention that framed the Cuban constitution, would be elected as Cuba's first president. The opposition candidate was Gen. Bartolome Maso. He seems to have been supported by a curious coalition of the elements which may be termed the extreme left and the extreme right; that is to say, Mr. Estrada Palma was the candidate of those who wished to try the experiment of a Cuban republic under the friendly auspices of the United States, and who accepted in good faith the terms of the so-called Platt amendment, which gives the United States the right of intervention to preserve order, and which accords us naval stations and provides in other ways for peculiarly close relations between Cuba and this country. There is an extreme native element hostile to the United States that wishes to repudiate the Platt amendment. There is another element composed largely of well-to-do Spaniards that greatly prefers out-and-out annexation to the United States and disapproves of the experiment of a Cuban republic in any form. This element seeks the benefit of strong and stable government

that would come with full American control, and desires, above all else, the advantages of the unrestricted American market for Cuban sugar and tobacco; and this element, apparently, has believed that the surest and quickest way to secure annexation, or an indefinite continuance of the American occupation, is to promote the success of that extreme party which proposes to repudiate the terms of the arrangement with the United States as agreed upon by the constitutional convention. Such repudiation, it is held, would be followed by the refusal of the American Government to withdraw its forces from Cuba.

*Reciprocity with Cuba.* While President McKinley, of course, had no authority to pledge in advance the action of our Congress, and did not agree to do so, it is not denied that he gave the Cuban convention full reason to believe that he would use all his influence, in case of Cuba's acceptance of the Platt amendment, to secure, in return, certain tariff concessions in favor of Cuban products. President Roosevelt, in his Message, has expressed himself on this point with great force and clearness. The President says:

I most earnestly ask your attention to the wisdom—indeed, to the vital need—of providing for a substantial reduction in the tariff duties on Cuban imports into the United States. Cuba has in her constitution affirmed what we desired,—that she should stand, in international matters, in closer and more friendly relations with us than with any other power; and we are bound by every consideration of honor and expediency to pass commercial measures in the interest of her well-being.

This recommendation of the President must be met and acted upon in the present session of Congress. Already it is evident that a powerful and well-organized effort will be made to defeat the proposal to open the markets of the United States on favorable terms to the principal products of Cuba. The largest elements in this organized opposition are composed of (1) those who are interested in American beet sugar; (2) those who are interested in the cane-sugar production of Louisiana and our Southern States; (3) the sugar interests of Hawaii; (4) the various agricultural and commercial interests of Porto Rico, and (5) the tobacco-producing interests of the United States. Our beet-sugar people see a great future for their industry if it can be protected from further outside competition. Hawaii and Porto Rico, having come inside our tariff zone with their sugar, tobacco, and other products, naturally want to keep out everybody else;—and especially do they want to keep out Cuba, because Cuba can produce vast quantities of sugar more cheaply than any other cane-growing region in the world, and can produce incompar-

ably the best tobacco. For similar reasons, of course, our sugar-growing planters of Louisiana and the South do not wish to be exposed to Cuban competition.

*A Question of Public Policy.* This is a subject that has been frequently discussed in the pages of this REVIEW. We agree absolutely with

President Roosevelt that public policy and public duty make it incumbent upon us to extend to Cuba some favorable measure of tariff reciprocity, even to the point of ultimate commercial union. There are always two sides to the economic argument in these questions of trade policy, and conflicting interests will inevitably clash. It would seem as if the American beet-sugar industry might develop and hold its own, even with Cuban sugar admitted on liberal terms. The farmer produces the sugar beet, not as his sole or principal crop, but as a minor crop in his scheme of rotation and diversified farming. After the sugar has been extracted, furthermore, the pulp of the beet remains as a valuable food for farm animals. Instead of Cuban sugar making the development of the beet-sugar industry of America impossible, it would seem more probable that the gradual occupation of the sugar market by home-grown beet sugar would in due time oblige Cuba to diminish greatly her sugar production and use her fertile soil for other crops.

*The Philippine Tariff.* The Supreme Court has now rendered a decision that settles the controversy over the tariff relations between the Philippine Islands and the United States. The principle of the decision is the same as that which had been made in the case of Porto Rico. The court holds, in brief, that Congress has a right to enact any tariff whatsoever between the United States and its territories and possessions; but until Congress has acted, it must be assumed that no tariff barriers exist between regions that are under the jurisdiction of the United States. This decision was handed down on December 2, the particular case before the court being that of a soldier who had brought a number of diamond rings into this country from the Philippines without paying duty, claiming constitutional rights in defense. By executive order, we had been levying on imports from the Philippines the regular rates on foreign goods imposed by the Dingley tariff, while at Manila there had been collected on American goods the rates imposed in a provisional tariff scheme prepared by the Philippine Commission and approved by the Secretary of War and the President. The obvious remedy, from the Administration standpoint, for the situation created by this decision of the Supreme



Court was the immediate passage by Congress of a brief bill to legalize the system which had been established by executive order. This being done to minimize the confusion and embarrassment resulting from the decision, Congress could with due deliberation take up the whole subject and deal on permanent lines with the question of the tariff relations between the United States and the Philippines.

*The President on Our Work in the Philippines.* On the subject of our mission in the Philippines, President Roosevelt's Message furnishes a platform upon

which all thoughtful and patriotic Americans ought to unite without reference to parties or to past views or theories respecting the wisdom of our being in those islands at all. It happens that we are there; and the President declares that we must, for the present, stay there for the well-being of the people. He vindicates our zeal to fit the inhabitants for intelligent self-government, and declares that we are more likely to make the mistake of putting authority into their hands too fast than of withholding it unduly. He does not disguise the fact that there are serious troubles ahead for us in the islands on account of the widespread tendency to a form of opposition that has degenerated into marauding and brigandage on a great scale. He would show every consideration for the peaceful elements of the population, and would protect them from these marauding and treacherous elements by measures of the most unmitigated sternness. For the due encouragement of the peaceful and law-abiding, as the President points out, it is urgently desirable that industrial prosperity should be restored, and that business enterprises be promoted in every proper way. He therefore advises Congress to pass laws under which the resources of the islands can be developed, and recommends the granting of franchises for limited terms of years to companies that would enter upon legitimate exploitation of the opportunities for railroads, mining, and other enterprises.

*The Report of the Commission.* President Roosevelt's remarks on the extreme unfitness of the Filipinos at the present time for the exercise of self-government are borne out and illustrated most strikingly in the facts and figures which the Philippine Commission sets forth in its new report issued at Washington on December 18. It has been ascertained that less than 10 per cent. of the population can even speak the Spanish language, much less read or write it. About seventy different dialects are spoken; and even in the pacified districts, which comprise, in the main, the most intelligent and advanced portions

of the archipelago, only about one person in sixty of the population has been found qualified to vote under a test which requires ability to write either Spanish or English, or else a very moderate property qualification. The commission makes suggestions which show plainly that it is now convinced that the work of educating and training the Filipinos for self-government must be a slow and tedious one. They point, nevertheless, to the encouraging fact that the natives are availing themselves with great eagerness of the educational opportunities that are afforded, and it is especially interesting to know that nearly two thousand Filipinos in Manila are qualifying themselves to become teachers of English.

*Our Language in the Orient.*

It is the opinion of some of the best of our officers that we have been showing rather too much deference to the Spanish language in the Philippine Islands, and that we could not do better than to bring the English tongue to the front in every possible way, encouraging its public and private use as the general medium of communication. But we infer from this latest report that this is just what is now being done. Spanish exists in the islands simply because it was the tongue of the civil and military authorities who preceded us in occupation. Even if we were proposing definitely to withdraw ten or twenty years hence, we could scarcely leave behind us any other legacy of our occupation that would so much benefit the Filipino people as a knowledge of the English language; for English is assuredly to be the world-language of commerce and of the higher civilization. Moreover, English is the language of Australia, which is destined to be the most important neighbor of the Philippines; it is India's language of adoption; it is domesticated in the Straits Settlements; it has an ever-increasing vogue in Japan; it prevails at Hongkong, — in short, it is the language of the future for international intercourse throughout the islands and coasts of the Pacific, while Spanish has no place whatever in those regions beyond its hold upon a small portion of the Filipino people, now exerted through what remains of the Spanish church establishment.

*The Bill in Congress.*

After a brief but spirited debate, the Philippine tariff bill passed the House of Representatives on December 18 by a vote of 163 to 128. This was a division on party lines, except that five Republicans voted with the Democratic minority, and three Democrats voted with the Republicans. The measure will come up in the Senate after the holiday vacation. The opponents of the bill in the House seemed to ignore, as if by intention, the fact that

this measure is merely designed to legalize the *status quo* and to provide the Philippines with a temporary revenue. The Philippine tariff rates had been carefully worked out by the commission, and had gone into effect last November. The measure now pending provides that all duties collected in the United States on the import of Philippine productions shall be paid to the treasury at Manila for the benefit of the islands. If the Philippines are to be held as a permanent possession of this country, this REVIEW will advocate absolute free trade with the United States. But the adoption of such a policy, in view of the public opinion now prevailing, would require a deliberate and thorough discussion in the press and on the stump as well as in Congress; and inasmuch as such a discussion could not result in a final conclusion this year, the only statesman-like thing to do is to legalize as a temporary expedient the arrangements that have been in force.

*As to Tariff Questions in General.* Although the Philippine tariff bill went through the House so promptly, it is to be remembered that the

House continues to do business under the Reed rules, which provide for a curtailment of debate, while the Senate is always at the mercy of an obstructive minority. It is understood that it will not be easy to bring this measure to the point of a final vote in the Senate. Furthermore, as we have already said, the question of our tariff relations with Cuba is destined to occupy more than the casual attention of both houses this winter. It is no longer supposed by any-

body, therefore, that there will be any attempt at a general revision of the Dingley tariff; nor is it believed among the well-informed that the larger policy of reciprocity as advocated in Mr. McKinley's last speech will be pushed to any definite conclusions. That must wait for a year or two. It seems likely enough that the treaties which had been negotiated by Mr. Kasson on behalf of our State Department will remain unreported in the hands of the committee to which they were referred. President Roosevelt, in his message, declared that "reciprocity must be treated as the handmaiden of protection." He held, in other words, that reciprocity must be incidental to the maintenance of our general system of a firm protective tariff. Nothing that he said could for a moment encourage those who advocate reciprocity as a transitional stage from the protective system to a revenue tariff. Even under the principles which he lays down with such clearness and force of statement, there is a considerable margin of superfluous altitude about many of our tariff schedules that would give a chance for the kind of reciprocity that the President favors. No disposition is visible, however, on the part of the Republican leaders of either house to take up, this winter, any modification of the existing tariff (except as respects Cuba), whether by reciprocity or otherwise.

*A Model State Paper.*

If it were not for the fact that such comparisons can have little purpose or value, it might well be asserted that the first annual message of no other American President had attracted such wide attention as that of Mr. Roosevelt, excepting that of Mr. Lincoln in 1861. The message was unusually long, but therein lies much of its merit. In England, parties are organized on the plan of personal leadership. Thus, the speeches of Lord Salisbury,—or those of Mr. Balfour or Mr. Chamberlain when regarded as expressing the prime minister's views,—form the sole body of policy and doctrine upon which the party in power is supposed to be carrying on the government of the country and of the empire. In this country, however, we have a wholly different system. The general positions of parties are expressed from time to time in the national platforms. But the exposition, in the highest sense, of the sober and responsible view of the party in power has come more and more to be looked for in the annual message of the President to Congress. The December message is to be regarded as outlining public policy for the benefit not alone of Congress, but of all the people of the country, and of foreign nations as well. Viewed in this light, President Roosevelt's first message is a



DON'T TAMPER WITH THE BUZZ SAW.  
From the North American (Philadelphia).

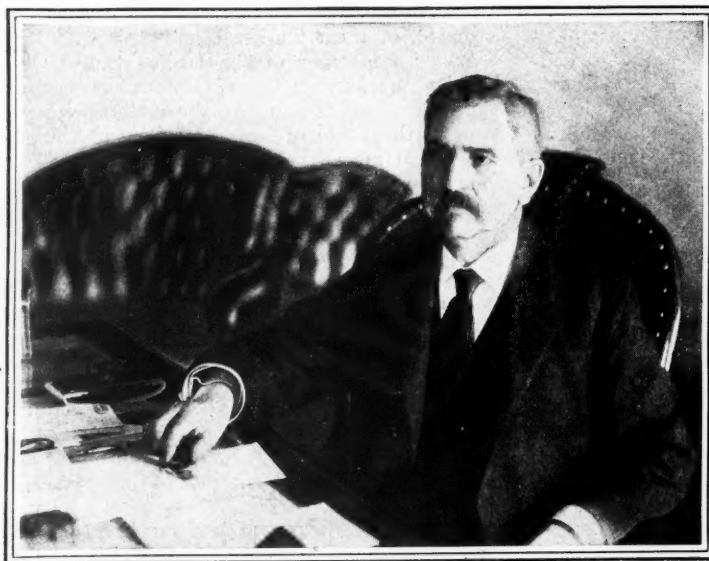
masterly document. It is superb as a literary composition ; but, what is far more important, it is full of practical sense from beginning to end, and it evinces at all points the clear and firm grasp of a constructive statesman. It would not be easy to exaggerate the favorable character of its reception by the country. Its length was merely due to the fact that an unusual number of questions of great importance had to be dealt with ; and the President chose to treat each one of them with directness and with some degree of thoroughness. This message will live in history.

*The President on the Armed Services.* Probably no other President ever brought to his duties in the White House such an inexhaustible fund of vitality and vigor, and so varied a knowledge of an expert kind about matters with which a President is obliged to deal every day. When certain of our vessels were dispatched, last month, to Venezuelan waters, President Roosevelt made the sharpest inquiries as to their recent records in the matter of gun practice. He happens to be one of the world's authorities upon naval subjects, both historical and practical ; and he finds himself commander-in-chief of the navy under the Constitution. That part of his message which discusses the navy is at once the most brilliant and most convincing expression that has ever been made of what is now accepted by all parties as the true naval policy of this country. But it is much more than a brilliant and convincing statement of policy, for it contains probably not fewer than one hundred specific points and suggestions embodying the essential matters to be kept in mind in the further upbuilding of our sea power. He indorses the recommendation of the Secretary of the Navy as to the laying down of new ships, but he points out that additional officers and men are more needed even than additional ships. It happens, again, that this energetic President is also an expert in all that pertains to the army ; and his discussion of the condition and needs of that service is illuminating and authoritative. President Roosevelt appreciates fully the new conditions of warfare, under which the personal qualities of the individual soldier are the principal thing. No American public man has ever made a more emphatic protest against the promotion of army officers on political, social, or personal grounds than is contained in this message.

*On the Civil Service.* Besides being official head of the army and navy, and thoroughly conversant with all that relates to both these services, the President is head of the civil service of the country, in which many scores of thou-

sands of officials are employed ; and here also he is master of the situation, thanks to his six long years as a member of the United States Civil Service Board under two administrations, and to his more recent relations to the civil-service systems of the State of New York and of the metropolis. Under his encouragement, the Civil Service Board at Washington is already giving effect to new rules that will work great improvements. Instead of seeking ways at the beginning of his administration by which to extend the patronage system for the upbuilding of personal or party influence, he points out clearly in his message a number of fields in which the strictly non-partisan merit system may be advantageously extended. He further advocates the adoption of some plan for the appointment of consular officers upon grounds of assured fitness. We shall have occasion in subsequent paragraphs to mention the President's views upon several other topics of importance.

*Retirement of Postmaster-General Smith.* Mr. Roosevelt has furnished perhaps the only instance in the history of the country in which the accession of a new President has not been followed by an almost immediate reorganization of the cabinet. Undoubtedly, the new President was perfectly sincere in his public and private statements to the effect that he would like to have Mr. McKinley's entire cabinet remain to the end of the term. In all the public offices he has ever held, he has shown himself able to work comfortably with all right-minded and efficient associates. It was indeed a mark of strength and proper self-confidence, rather than of weakness, that Mr. Roosevelt was so willing to adopt as his own an advisory organization that had gradually formed itself about the personality of his predecessor. It was almost inevitable, however, that some changes should occur in the cabinet, inasmuch as several members of it who had continued in their duties from Mr. McKinley's first administration were known to be anxious to retire as soon as circumstances would permit. The first of these to take leave is the Postmaster-General, Mr. Charles Emory Smith, of Philadelphia. He left his work as editor of the *Philadelphia Press* to succeed Mr. Gary as Postmaster-General early in Mr. McKinley's first administration ; and he finds it advisable, for personal reasons, to return to his former duties. Mr. Smith brought great intelligence and aptness to the work of his department, although it was not primarily for the technical duties of the department that Mr. McKinley wished to have Mr. Smith in his cabinet. He has performed faithfully and well the double duty of general adviser to the President and departmental chief.



HON. CHARLES EMORY SMITH.

*A Postal Problem.*

During his administration, while the work of the postal department has greatly increased, it has steadily been approaching the point of self-support, the deficit being now only four million dollars. Mr. Smith's recent efforts have been put forth especially in the direction of reducing the burden upon the Government of the so-called "second-class" or "pound-rate" mail matter. Under the law, newspapers and periodicals, when transmitted through the mails, are prepaid by the publishers at the uniform rate of one cent a pound. The amount of such matter now carried and distributed by the service has grown to be 60 per cent. of the whole volume of the postal business. Yet less than 4 per cent. of the Government's total income from the postal service is derived from second-class matter. The postal department holds that the pound-rate privilege is abused to an enormous extent, and that more than one-half of the printed matter that now goes as second-class is purely of an advertising or commercial nature, and does not belong in the field of legitimate journalism or periodical literature. The recent attempts of the department to enforce a more rigid classification has caused a good deal of friction in certain quarters. The problem is one of great importance, and it will require some further action by Congress.

*Appointment of Mr. Payne.*

Mr. Smith is quoted as having said, as the result of his experience, that the Postmaster-General of the United States ought to be a permanent official, the post-

office system being a vast business enterprise with many ramifications, from which politics ought to be excluded, its conduct requiring special knowledge and business ability of the highest order. The reform of the civil service has undoubtedly improved our postal system very greatly in the large towns, in the railway branch, and in the general offices at Washington. It was promptly announced last month that Mr. Roosevelt had selected the Hon. Henry C. Payne, of Milwaukee, as Mr. Smith's successor. Mr. Payne has long been very prominent in Republican politics, being the national committeeman from the State of Wisconsin. He

served as postmaster of Milwaukee for some ten years prior to Mr. Cleveland's first administration. In his own State, he has been identified with railways and electric companies. In the national Republican conventions, he has been the chief advocate of a very desirable reform yet to be accomplished—namely, the apportionment of membership on the basis of the actual party vote as given in the previous national election. This would exclude nine-tenths of the delegates from the far South. It is expected that Mr. Payne will enter the cabinet about January 15. Reports were also current, last month, that Secretary Gage would retire from the Treasury Department in the near future, and that Judge Taft, who is now on the high seas returning from the Philippines, would enter the cabinet. And it was rumored that Secretaries Hay, Hitchcock, and Long were proposing to retire before many months; but all such rumors were without authority.

*Appointments in General.*

So vast is the official organization of the United States that, although the new President had no desire whatever to create vacancies, and had no especial fondness for exercising the appointive power, he has nevertheless had to sign, on an average, thirty official commissions a day, or nearly two hundred a week, to fill vacancies that occur in the natural order of things. His appointments have been excellent, on the whole, although it is obvious that in most cases he must rely wholly upon the knowledge and good faith of Congress-

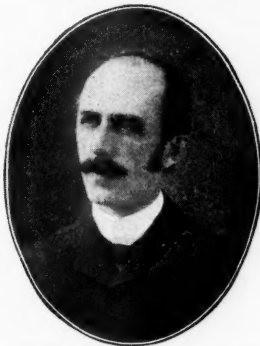


men, Senators, and others in public life who recommend the candidates for local office. Among the most conspicuously fit of Mr. Roosevelt's recent appointments may be mentioned that of Judge Francis E. Baker, of the Supreme Court of Indiana, to be United States circuit judge. As affairs are shaping themselves in this country, it is a matter of more grave concern than ever that the members of the federal judiciary should be men of the highest character, of great legal ability, and of the judicial temperament. Judge Baker adds positive strength to the bench in what is probably the most important of our federal circuits,—namely, that which includes Chicago.

*The "Schley Question."* Scarcely any other public matter was discussed with so much interest by the press and the people, last month,

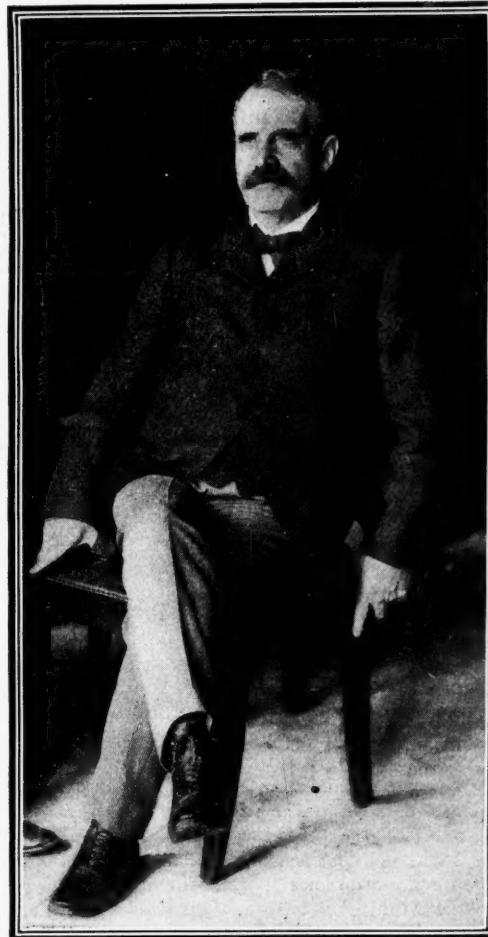
as the finding of the court of inquiry in the case of Admiral Schley. Although the admiral's conduct in the management of his squadron during the late Spanish War had been bitterly criticised in naval circles, he had taken no steps to defend himself until a certain book appeared which accused the admiral, among other things, of base cowardice. When it came to be asserted without contradiction that this book had been passed upon and indorsed in the proof sheets by various high officers of the navy, Admiral Schley was advised that the time had come for him to seek vindication.

Accordingly, he asked Secretary Long to appoint a naval court of inquiry. The Navy Department formulated the charges against the admiral, and proceeded to select the court, which consisted of Admiral Dewey, as president, and two retired rear-admirals, Benham and Ramsay. The charges were prosecuted by Captain Lemly, on behalf of the Navy Department, and Admiral Schley was represented by able counsel. The testimony filled the newspapers for a number of weeks. The inquiry closed on November 12, and the country eagerly awaited the verdict. After having taken a month for deliberation, the court presented its findings to the Secretary of the Navy, who promptly gave them to the public on December 13.



JUDGE FRANCIS E. BAKER, OF  
THE INDIANA SUPREME  
COURT.

(Appointed, last month, to the  
United States circuit bench.)



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HON. HENRY C. PAYNE.

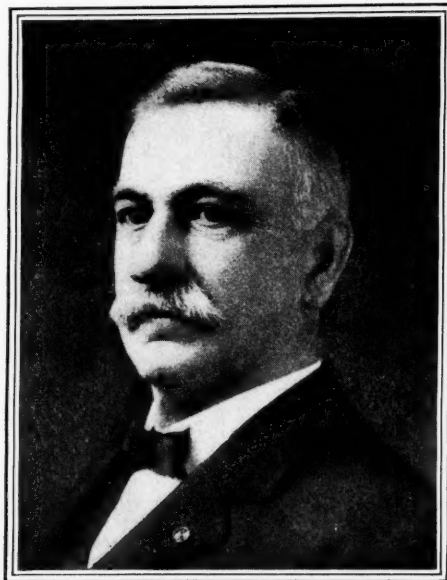
(Appointed Postmaster-General.)

*Findings of  
the Court.*

As respects the charge of personal cowardice in the battle of Santiago, the court vindicated Admiral Schley, and declared that "his conduct during the battle of July 3 was self-possessed, and he encouraged, in his own person, his subordinates, officers and men, to fight courageously." As respects various other charges in detail as to Schley's management of his squadron, the tenor of the findings of the court is, in the main, adverse to the admiral. The spirit of the findings, which have to do mostly with the admiral's actions and methods in the earlier part of the campaign, is summed up in the following sentence: "Commodore Schley's conduct in connection with the events of the Santiago campaign prior to June 1, 1898, was characterized by vacillation, dilatoriness, and

lack of enterprise." Admiral Dewey did not wholly agree with his colleagues, and filed an additional opinion, the tenor of which would seem to show that Admiral Dewey thought, upon the whole, that Schley's handling of his squadron had been efficient,—although the more one studies this additional opinion the more difficult it becomes to feel quite sure to what extent the president of the court wished to be regarded by the public as differing from his two colleagues. Admiral Dewey's additional opinion concludes as follows : "Commodore Schley was the senior officer of our squadron off Santiago when the Spanish squadron attempted to escape on the morning of July 3, 1898. He was in absolute command, and is entitled to the credit due to such commanding officer for the glorious victory which resulted in the total destruction of the Spanish ships." The court united in making the following recommendation : "In view of the length of time which has elapsed since the occurrence of the events of the Santiago campaign, the court recommends no further proceedings be had in the premises." This in plain English means that they do not wish their diverse opinion of Admiral Schley's conduct to be made the basis of court-martial proceedings against him. Although various resolutions were introduced in Congress by the supporters of Admiral Schley, it seems improbable that a Congressional investigation will be made. Meanwhile, Admiral Schley, on December 16, asked the Secretary of the Navy to withhold action on the court's report until he could file objections to its findings. A long bill of exceptions was accordingly filed on the 18th. Objections to Admiral Dewey's opinion, on the other hand, were formulated on behalf of Admiral Sampson. The newspapers and the public opinion of the country are very sharply divided on the whole subject.

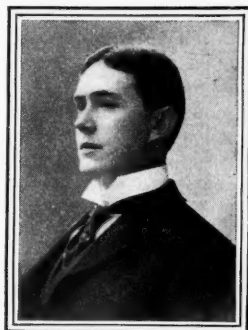
We remarked last month upon Mayor-elect Low's good fortune in securing the Hon. George L. Rives as corporation counsel for New York City. From time to time during December Mr. Low announced the names of other heads of departments as they were chosen. Prominent among these was the choice of Col. John N. Partridge to be commissioner of police. Mr. Roosevelt as governor had made Colonel Partridge superintendent of public works, putting him in charge of the Erie Canal and other State enterprises. He had been police commissioner of Brooklyn when Mr. Low was mayor of that city. His appointment as police commissioner meets with the highest commendation. Another appointment of ideal excellence is that of Mr. Robert W. De Forest as tenement-house commissioner. For ten years Mr. De Forest has



COL. JOHN N. PARTRIDGE.

been president of the Charity Organization Society of New York, and he was chairman of the commission appointed by Governor Roosevelt which investigated the tenement-house question and recommended certain important changes of the law which have been carried into effect. His administration of this office will enhance the welfare of millions of human beings in our own day, and of countless millions yet to come. The secretary of the mayor is an official of great importance in the actual work of administration, and Mayor Low has wisely chosen for this place Mr. James B. Reynolds, for many years head worker of the University Settlement Society, and closely in touch with all practical conditions of life and labor among the great masses of the plain people of the city, whose confidence he deservedly holds. Mr. Homer Folks, who is appointed commissioner of the charity department, although a young man, is widely known throughout the country as an expert in the administration of public institutions, whether of a charitable or a correctional nature, and for years has served as the executive of the New York Charities Aid Society. At the request of General Wood, Mr. Folks went to Cuba and drew up the law under which the insular department of charities was organized in 1900. Last May he was made general secretary of the National Conference of Charities and Corrections. These facts sufficiently attest his striking qualifications for his new place. The whole country will be interested in the man

who is to carry on the work of street-cleaning and disposal of waste that was so brilliantly organized by the lamented Colonel Waring. For this task Mr. Low has chosen a distinguished surgeon, Dr. John McGaw Woodbury, who went to Porto Rico with General Miles and gave evidence of remarkable executive ability in managing transport work and in cleaning up the city of Ponce. More lately he has made investigation abroad of the municipal problems of drainage and cleansing, from the sanitary standpoint, and it is clear that he possesses both intelligence and executive force for his new duties. The appointment of Dr. E. J. Lederle as head of the health department is a case of promotion. For a number of years past he has been in the department as its chief chemist. Under the new organization of the health department, the medical side of its work is to be under the direction of the distinguished bacteriologist, Dr. Hermann J. Biggs, whose article on Dr. Koch and his discoveries, in this REVIEW, our readers will remember as having appeared last September. It may suffice for the present to mention these names as indicative of the very high order of character, ability, and talent that is to be associated with Mayor Low in carrying on the new administration of the city for the coming two years.

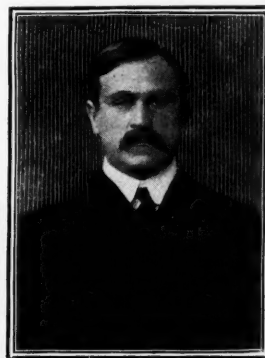


MR. JAMES B. REYNOLDS.

The continued  
Progress of  
New York.  
growth

and progress of New York are without abatement. Under the stimulus of the new administration, the public and municipal side of the city's advancement will be on a par with its private and unofficial enterprises. Of all new projects relating to New York City, the most important one is that which was definitely announced last month on behalf of the Pennsylvania Railroad Company. This great corporation proposes to bring its trains to the heart of the city by means of a tunnel from the New Jersey shore under the great tidal sweep of the North River.

An imposing station will be built at Thirty-third Street and Seventh Avenue. The tunnel will thence continue eastward under the city and under the East River to Long Island, in order to serve the purposes of the Long Island Railroad system, control of which was purchased some time ago by the Pennsylvania company. Great engineering skill has been requisite in overcoming the difficulties of driving a railway tunnel through the



DR. E. J. LEDERLE.

soft sand that underlies the North River. A new center for hotels and great stores will doubtless be created in the vicinity of the Pennsylvania's station. This is instanced by the fact

that a famous New York church, the Broadway Tabernacle, was sold last month for \$1,300,000 to give place for a \$3,000,000 twenty-story hotel. No question of late has been more earnestly discussed in New York than that of the better regulation and control of the saloon business. Mr. Jerome, elected as the new district attorney, strongly advocates the opening of saloons during Sunday afternoon and evening.

The elimination of the Boer commandos has been proceeding steadily, and unless all signs fail, the South African war is nearly ended. The Boer cause was hopeless long ago, and continued resistance has served no righteous end. The operations of the Boers in Cape Colony received a heavy blow when in the middle of last month General French's troops captured Commandant Kruitziuger. Lord Kitch-



DIAGRAM OF THE PROJECTED TUNNEL UNDER NEW YORK OF THE PENNSYLVANIA AND LONG ISLAND RAILROADS.

ener has been in personal command in the eastern Transvaal, and has been steadily clearing the territory between the two main lines of railway, one of which goes to Natal and the other to Delagoa Bay. Many people are going back to Johannesburg, and the mines are being rapidly opened up. Meanwhile, the public opinion of the outside world, as well as that of England itself, has condemned the concentration camps in which the British have huddled together the Boer men, women, and children under conditions that have caused such a slaughter of the innocents as is almost without parallel in history. The British Government professed, last month, to be making attempts to reform this terrible and needless abuse. A Blue Book issued by the colonial office on December 14 gives detailed statistics of deaths in these concentration camps. In six months 12,441 white people died in them, of whom 10,113 were children. Children's deaths in the month of October were at the rate of 572 per thousand per annum; for November, the rate was 469. This is too horrible for comment.

*Lord Rose-  
bery to  
the Front.*

The chief political topic in England has been the return of Lord Rosebery to politics, this being signalized by a great speech at Chesterfield, to which the entire country had looked forward with the keenest anticipation. The fact is that Lord Rosebery's "retirement" was a sort of technical affair; for he has not at any time allowed his keen interest in politics to relax, and he has remained a conspicuous member of the upper house of Parliament. His "return" on December 16 merely means that he is willing to assume party leadership on the basis of the platform laid down in his speech, and that if his services are desired he is ready to try his hand again as prime minister whenever the swing of the pendulum takes Lord Salisbury and the Tory cabinet out of office. The object of his speech was to lay down the policy which, in his opinion, should be adopted for the remedying of existing ills and the reunion of the forces of the Liberal party. Mr. Asquith and Sir Edward Grey were the most prominent members of Parliament who were present.

*His Programme  
for Liberal Re-  
organization.*

Going back to his programme of 1893, when he was in office, he declared that the speech he made at that time was a model of what was now to be avoided. He advised that the party should not promise more than it could fulfill in the way of reform; that it should not disassociate itself from the sentiment of the empire; and that, above all, its watchword should be efficiency. He mentioned

the parliamentary machine, the war office, the navy, the nation's commerce and industry, and its educational system, as all needing to be overhauled in order to make them truly efficient. Other matters requiring efficient treatment were the housing of the poor and the temperance question. He demanded another appeal to the country as soon as the war was really ended. He held, indeed, that the war must be prosecuted with energy and fought out; but he advised that peace negotiations be begun as soon as possible on the basis of any overtures that might be offered. While holding that Boer independence is gone forever, Lord Rosebery urges liberality in dealing with the Boer people. It was certainly a great speech. Under Rosebery's active leadership, there may come about an entire reconstruction of English parties.

*Labor and  
Industry.*

While trade-unionism is under the sharpest and most intense criticism in England, labor and capital in America are endeavoring to come together on terms of mutual good understanding for the benefit of all concerned. The American idea is to encourage the largest possible product by the use of the workman's skill and brain in the management of constantly improving machinery. Under the auspices of the Civic Federation, a conference in the interest of voluntary industrial arbitration was held in New York last month, attended by such employers and representative capitalists as Senator Hanna and President Schwab of the Steel Corporation, by the most prominent heads of labor organizations, and by public-spirited citizens, lay and clerical, of whom Archbishop Ireland, Bishop Potter, and the Hon. Oscar S. Straus, who presided over the conference, were typical. A large committee of eminent men representing labor, capital, and the general public has been chosen as a body of arbitrators. We shall have occasion to revert to this topic in future months. Reactionary conditions in Europe have affected to some extent the world-prices of standard commodities; and American industry, which continues in the main very prosperous, must soon begin to feel some of the depressing effects of the world's diminished ability to buy great quantities of goods. The tendency to concentration of railway capital and management goes steadily on in the face of all opposition. President Roosevelt's remarkable plea for the federal oversight of great corporations on the cardinal principle of publicity has had the moral approval of the best men in the trusts themselves, and has been accounted wise and prudent by the concurrent opinion of the whole country.





THE SOUTH CAROLINA AND INTERSTATE AND WEST INDIAN EXPOSITION, AT CHARLESTON, OPENED ON DECEMBER 2, 1901—THIS BUILDING BEING NAMED "THE EXEDRA." (See exposition article on page 58.)

## RECORD OF CURRENT EVENTS.

(From November 20 to December 19, 1901.)

### PROCEEDINGS IN CONGRESS.

December 2.—The Fifty-seventh Congress holds its first session....In the Senate, the death of Mr. Kyle, of South Dakota, is announced, and Messrs. Kittredge, of South Dakota, Gibson, of Montana, and Dietrich and Millard, of Nebraska, are sworn in....In the House, Speaker Henderson and the other officers of the last House are reelected.

December 3.—President Roosevelt's annual message is read in both branches; resolutions on the death of President McKinley are adopted, and both Senate and House adjourn as a mark of respect to the late President's memory.

December 4.—In the Senate, the new Hay-Pauncefote isthmian canal treaty is received from President Roosevelt and referred to the Committee on Foreign Relations; a Philippine tariff bill is introduced by Mr. Lodge (Rep., Mass.), a bill for the protection of Presidents, by Mr. Hoar (Rep., Mass.), and two Nicaragua Canal bills.

December 5.—The Senate passes a bill extending the life of the United States Industrial Commission; a committee on McKinley memorial exercises is appointed; Senator Lodge (Rep., Mass.) introduces a bill providing for the construction of an executive building in Washington, to cost \$1,000,000.

December 6.—In the House, Speaker Henderson announces the Committees on Ways and Means, Appropriations, and Enrolled Bills; Mr. Tayler (Rep., Ohio) introduces a bill providing a pension of \$5,000 a year for the widow of President McKinley.

December 9.—In the Senate, Mr. Frye (Rep., Maine) introduces his ship-subsidy bill in a modified form.

December 10.—In the Senate, Mr. Gallinger (Rep., N. H.) introduces a bill for the protection of the President.

....In the House, Speaker Henderson announces the committees not heretofore appointed.

December 13.—In the House, the Philippine tariff bill is reported from the Ways and Means Committee.

December 16.—The Senate, in executive session, ratifies the Hay-Pauncefote isthmian canal treaty by a vote of 72 to 6; the nomination of Attorney-General Knox is confirmed.

December 17.—The House begins debate on the Philippine tariff bill.

December 18.—In the Senate, the committee appointments are approved....The House passes the Philippine tariff bill by a vote of 163 to 128.

December 19.—Both branches adjourn for the holiday recess until January 6, 1902.

### POLITICS AND GOVERNMENT—AMERICAN.

November 20.—Boston Democrats nominate Patrick A. Collins for mayor.

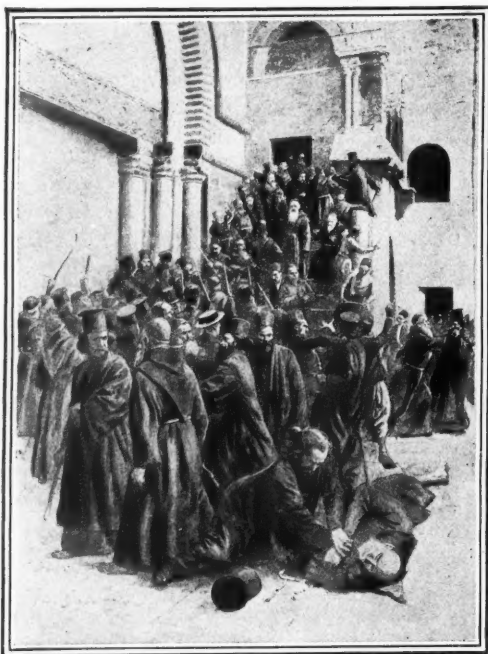
November 22.—President Roosevelt appoints Capt. William Crozier chief of ordnance, to succeed Gen. A. R. Buffington, retired.

November 30.—Admiral Walker delivers the report of the Isthmian Canal Commission to Secretary Hay (see page 35).

December 2.—The United States Supreme Court gives its decisions in the last two test suits brought to establish the status of the Philippines and Porto Rico.

December 3.—Of 14 Massachusetts cities holding municipal elections, 10 are carried by Republicans, 2 by Democrats, and 2 by Independents.

December 4.—The Nebraska Supreme Court enters a decree declaring that the State has failed to prove that the Standard Oil Company is a trust, or a combination in restraint of trade.



THE CONFLICT BETWEEN FRANCISCAN AND ORTHODOX GREEK MONKS AT THE CHURCH OF THE HOLY SEPULCHRE, JERUSALEM, ON NOVEMBER 4, 1901.

December 10.—Patrick A. Collins (Dem.) is elected mayor of Boston by a large majority over Mayor Hart (Rep.), the present incumbent; of the 17 other Massachusetts cities in which municipal elections are held, the Republicans carry 11, the Democrats 3, and non-partisan tickets 3.... President Roosevelt announces the appointment of Francis E. Baker, of Indiana, as United States judge for the Seventh Judicial District.

December 13.—The findings of the Schley court of inquiry are made public at Washington; Rear-Admirals Benham and Ramsay censure Admiral Schley on all the points under investigation, but praise his conduct in battle; Admiral Dewey sustains Schley on several points and gives him credit for the Santiago victory; it is recommended that no further proceedings be taken.

December 17.—Postmaster-General Charles Emory Smith resigns his office; President Roosevelt announces the selection of Henry C. Payne, of Wisconsin, as his successor.

December 18.—Admiral Schley's counsel present a bill of exceptions to the findings of the Schley court of inquiry.... The report of the Taft Commission on civil government for the Philippines is made public.

#### POLITICS AND GOVERNMENT—FOREIGN.

November 22.—President Castro, of Venezuela, causes the arrest of Ramon Guerra, his minister of war.... Monsignor Procopius, Metropolitan of Greece, resigns, owing to the students' disturbances at Athens, caused by the proposition to translate the Gospels into modern Greek. The chief of the *gendarmerie* and the prefect of police also tender their resignations to the King of

Greece.... The ministerial council at Constantinople decides to borrow £40,000 from the Sacred Caravan, the treasury being empty.... The French Senate discusses the population question and recommends a commission on the subject.

November 24.—The Greek cabinet resigns, owing to the riots over the translation of the Gospels; a new cabinet is named, headed by M. Zaimis.

November 25.—General elections in Uruguay pass off quietly.

November 26.—The German Reichstag reassembles.

December 2.—The German tariff debate is begun in the Reichstag.

December 6.—A motion for the establishment of a university for the southern Slavs is rejected, after a long debate, by the lower house of the Austrian Reichsrath.... The German budget estimates for revenue and expenditure, as submitted to the Reichstag, balance at 2,349,742,456 marks (about \$587,435,614); the chancellor is authorized by the bill to borrow 182,058,945 marks (about \$45,514,736).... The Peruvian Chamber of Deputies sanctions the gold-standard law, already approved by the Senate.... The Legislative Council of New South Wales passes a bill for the arbitration of labor disputes.

December 10.—The French Chamber of Deputies passes the bill granting bounties to merchant vessels by a vote of 434 to 125.... The Japanese Imperial Diet is opened.... The Polish question is debated in the German Reichstag.... A proclamation of the British Government announces the date of King Edward's coronation as June 26, 1902.

December 16.—Lord Rosebery addresses British Liberals at Chesterfield on current political issues.

#### INTERNATIONAL RELATIONS.

November 20.—The Hague tribunal declares itself incompetent to recognize the Boer appeal for intervention in the South African war.

November 22.—The Colombian Government informs the United States that it cannot guarantee protection for transit across the isthmus.

November 25.—Marines from the United States battleship *Iowa* reestablish transit across the Isthmus of Panama, interrupted by the Colombian rebels.... The French Chamber of Deputies decides on the sum of 265,000,000 francs (\$53,000,000) for the Chinese indemnity loan.

November 26.—The Italian and British delegates appointed to settle various questions relating to the frontier between the Soudan and Erytrea hold two sittings at Rome.

November 27.—In the Pan-American Congress at Mexico, the Argentine delegation favors compulsory arbitration of all international disputes.

November 28.—The Marquis Ito, of Japan, is received by the Czar of Russia, who bestows on him the Order of St. Alexander Nevsky.

November 29.—The government of Colon is transferred, through the captains of the foreign warships before the town, from the hands of the Colombian Liberals to those of General Alban, commander of the government forces.

December 5.—The text of the new Hay-Pauncefote isthmian canal treaty between the United States and Great Britain is made public.

December 7.—The lynching of two Italians in Mississippi in July, 1901, is discussed in the Italian Senate.

December 9.—United States Minister Merry and Dr. Sanchez, Nicaraguan minister of foreign affairs, sign a treaty by which Nicaragua agrees to lease perpetually to the United States a section of territory six miles wide along the route of the proposed canal.... An extradition treaty and a treaty providing for the use of post-office money orders, between the United States and Bolivia, are approved by the Bolivian Congress.

December 10.—The committee of the Pan-American Congress at Mexico on an international court of claims resolves that, in order to prevent an overwhelming Latin membership in the proposed board of judges, each American republic should name at least one Anglo-Saxon judge.

December 13.—Chile offers a new proposition for settlement of her difficulties with Argentina.

December 16.—It is announced that a treaty for the cession of the Danish West Indies to the United States has been completed.

#### MILITARY OPERATIONS IN SOUTH AFRICA.

November 20.—Commandant Buys is captured while attacking about one hundred railway pioneers on the Vaal, near Villierdorp; Major Fisher is killed and five British officers are wounded.

November 25.—An arrangement is announced between Lord Kitchener and Sir J. Gordon Sprigg, the premier of Cape Colony, whereby the colony resumes control of the colonial forces in the district.

November 26.—The Boers attack the British line of blockhouses on the Delagoa Bay Railway, but are repulsed with loss.

November 27.—Lord Kitchener reports the capture by General Knox of 36 prisoners, including Commandant Joubert, who is wounded.... At a meeting of the executive council at Pretoria a commission is appointed to inquire into the working of the gold law.... Lord Milner visits the camps, hospitals, and schools at Krügersdorp.

December 5.—Three British columns capture 250 Boer prisoners.

December 11.—Lord Kitchener reports the capture of a Boer commando by Gen. Bruce Hamilton; 7 men are killed and 131 made prisoners.

December 13.—Gen. Bruce Hamilton surprises a Boer laager at Witkraens, 25 miles northwest of Ermelo, killing 16 Boers and capturing 76 armed prisoners.

#### OTHER OCCURRENCES OF THE MONTH.

November 20.—At a meeting of unemployed in Berlin, Germany, resolutions are adopted calling on the government to take measures for the relief of distress.... United States marines scale a high precipice in the island of Samar, Philippine Islands, to capture an insurgent stronghold.... The National Reciprocity Convention, held at Washington, declares against the treaties negotiated by Commissioner Kasson, and favors the appointment of a reciprocity commission.... Thirty miners lose their lives by suffocation from smoke driven into the Bullion tunnel, of the Smuggler Union Mine, near Telluride, Col., from a fire at the tunnel-mouth.

November 22.—A convention at San Francisco, com-

posed of 3,000 delegates, adopts resolutions demanding the reenactment of the present Chinese exclusion law.... A huge bank fraud in Liverpool by one of the bookkeepers is discovered; £170,000 is reported to be missing.

November 23.—Harvard defeats Yale at football by a score of 22 to 0.

November 24.—The jubilee of M. Berthelot, the great French chemist, is celebrated at an international *fête* of science in Paris (see page 46).... The Holland submarine torpedo boat *Fulton* stays under water 15 hours off New Suffolk, Long Island, with crew on board.

November 26.—The historic Battle Abbey, in England, is sold at auction, and realizes £200,000 (about \$1,000,000).... A boiler explosion in a Detroit (Mich.) factory causes the death of 27 men.

November 27.—In a collision between express trains on the Wabash Railroad, near Seneca, Mich., more than 80 lives are lost.

December 2.—The South Carolina and Interstate and West Indian Exposition, at Charleston, S. C., is formally opened, Senator Depew, of New York, delivering the principal address (see page 58).... The International Live Stock Exposition is opened at Chicago.

December 3.—Official investigations in Germany show that the unemployed in the larger cities form from 7 to 10 per cent. of their populations, the aggregate of unemployed in the whole empire reaching 500,000, or 4 per cent. of the total number of artisans in the country.

December 5.—The American Waltham Watch Company offers to its 3,000 employees at Waltham, Mass., a reduction in the hours of labor of one hour a week, without reduction of pay.... The American Federation of Labor opens its annual convention at Scranton, Pa.

December 10.—The Nobel prizes for 1901 are announced (see page 41).... It is announced that Mr. An-



REMOVAL OF BARTHOLDI'S NEW STATUE OF VERCINGETORIX TO THE GRAND PALAIS DES CHAMPS-ÉLYSÉES, ON A POWERFUL AUTOMOBILE.

drew Carnegie offers to the United States Government \$10,000,000 for the maintenance of an institution of scientific research.

December 11.—The plans for a Pennsylvania Railroad tunnel under New York City and the Hudson and East rivers are made public.

December 14.—Signor Marconi announces the receipt at St. Johns, Newfoundland, of wireless messages from Cornwall, England, a distance of 1,700 miles.

December 15.—An earthquake extends over a wide area in Luzon, Philippine Islands.... Heavy floods cause much damage in Pennsylvania and New York.

December 16.—The International Sugar Conference is opened at Brussels.... The industrial department of the National Civic Federation holds a conference in New York City.



THE LATE JOHN SWINTON.  
(Advocate of labor unions.)

#### OBITUARY.

November 19.—Thomas Meehan, of Philadelphia, naturalist and horticulturist, 75.

November 20.—John H. Burke, of Chicago, gospel singer and writer, 46.... Col. Dorus M. Fox, colonel of the Twenty-seventh Michigan Infantry during the Civil War, and author, 84.... Capt. John Lawson, oldest engineer in the United States, and builder of the first locomotive engine while apprenticed to George Stephenson, 96.

November 22.—Count von Hatzfeldt-Wildenburg, German ambassador to Great Britain since 1888, 70.... Señor Gamazo, late Spanish minister of finance, 63.

November 23.—Rev. O. H. Warren, D.D., formerly editor of the *Northern Christian Advocate*, 66.

November 24.—Alexander D. Anderson, Washington lawyer.

November 26.—Prof. Joseph Henry Thayer, of Harvard University, 73.

November 27.—Clement Studebaker, manufacturer, of South Bend, Ind., 70.... Ex-Gov. Davis H. Waite, of Colorado, 76.

November 29.—Thomas Clarke Luby, Irish Nationalist and one of the founders of the Fenian movement, 79.... Señor Francisco Pi y Margall, leader of the Republican party in Spain, 77.

November 30.—Mrs. Nancy S. Foster, Chicago phil-anthropist, 93.... Dr. Henry Clarke Houghton, of New York, 64.

December 2.—Edward John Eyre, governor of Jamaica from 1862 to 1866, 86.... L. L. Foster, president of the Texas Agricultural and Mechanical College, 48.

December 3.—Abraham D. Hazen, formerly third assistant postmaster-general, 60.... Arthur Grissom, editor of the *Smart Set*, 33.

December 4.—Sir William MacCormac, president of the Royal College of Surgeons, 65.

December 5.—Capt. Richard R. Turner, keeper of the famous Libby Prison at Richmond, 63.

December 8.—T. N. Francis, Chicago publisher, 64.

December 10.—Ex-Judge Robert Hughes, Virginia, 81.

December 11.—Ex-Judge Caleb Blodgett, of Boston, 69.... Ex-Judge George A. Madill, of St. Louis, 63.

December 12.—Edmund M. Wood, of Natick, Mass., a well-known florist, 65.... Rev. Edward T. Hiscox, D.D., of Mount Vernon, N. Y., 89.... William B. Hutton, a prominent civil engineer of Washington, 75.

December 13.—Dr. Robert Curry, founder of Curry University, at Pittsburg, 80.

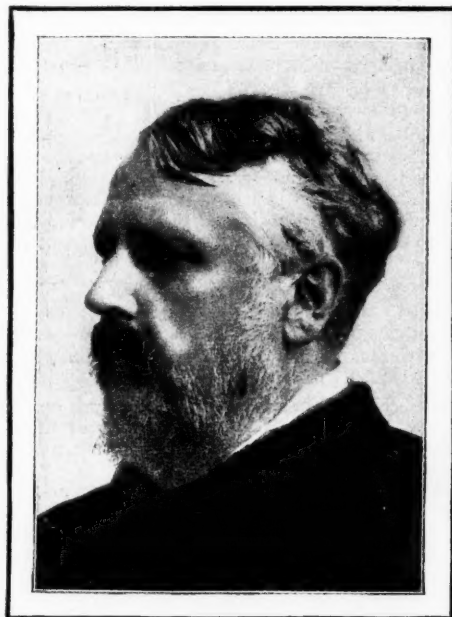
December 14.—David P. Thompson, ex-United States minister to Turkey, 67.

December 15.—John Swinton, of Brooklyn, writer on economic and labor questions, 72.... William L. Farland, founder of Butte, Mont., 67.

December 16.—Gov. William Gregory, of Rhode Island, 52.... Oscar F. Breeze, of Baltimore, 76.... Sir James Laing, the famous Sunderland shipbuilder, 78.... Charles W. Lundy, of Halifax, Nova Scotia, one of the pioneer Atlantic cable operators, 68.

December 17.—Dr. Rush S. Huidekoper, of Philadelphia, veterinary authority, 47.... Sir Francis De Winton, comptroller and treasurer of the household of the Duke of York, 66.... Rev. Benjamin D. Palmer, a well-known minister of the New Church (Swedenborgian), 78.

December 18.—Gen. W. F. Perry, of the Confederate army, 76.... J. C. Stone, Jr., of Leavenworth, Kan., adjutant-general of the State of Kansas during the Civil War, 75.



THE LATE PRESIDENT OF THE ROYAL COLLEGE OF SURGEONS, SIR WILLIAM MACCORMAC.

(Sir William, who was eminent as a London surgeon and five times president of the Royal College of Surgeons, was chief of the Anglo-American Ambulance in the Franco-Prussian War, served in the Turko-Russian War, was knighted in 1881, and in 1899-1900 was in South Africa as Consulting Surgeon to the British Forces.)



## CURRENT TOPICS IN CARTOONS.



THE GREAT AMERICAN "LIBERTY TANDEM" AT THE PAN-AMERICAN CONGRESS.

"Dona Xochitl" (Mexico) and "Miss Estrella" (the United States) ride together.—From *El Hijo Del Ahuizote* (Mexico).

THE cartoons of the month show a striking revival of interest throughout the United States in the affairs of the countries lying to the south of us in our own hemisphere. Various aspects of the isthmian canal negotiations, the intervention of the United States to keep order along the Panama Railroad, the revolutions in Colombia and Venezuela, the threats of war between those two countries and also between Argentina and Chile, the approach of the Cuban elections, the prospect of purchase by the United States of the Danish West Indies, the persistency of German designs for an imperial foothold in South America, and last, but not least, the Pan-American Congress at the city of Mexico, have been among the prominent topics of the month. We reproduce on this page two cartoons apropos of the congress, from the Mexican paper, *El Hijo Del Ahuizote*.



A GASTRONOMIC EXHIBITION AT A BANQUET GIVEN FOR THE MEMBERS OF THE PAN-AMERICAN CONGRESS.

Uncle Sam exemplifies the "Monroe Doctrine" of "America for the Americans," while President Porfirio Diaz of Mexico illustrates the "Diaz Doctrine" of "Mexico for the Porfirios."—From *El Hijo Del Ahuizote* (Mexico).



THE NEW HERCULES.  
From *Nebelspalter* (Zurich).

President Roosevelt begins to figure prominently in the foreign cartoons. In most of them he is well treated, although the Germans already show signs of treating him with that disfavor which they have visited of late upon all things American and English. In the drawing from *Kladderadatsch*, on this page, he stands at Uncle Sam's elbow while that old gentleman swaps stories with John Bull about their respective bad legs, labeled, the Transvaal and the Philippines.



JOHN BULL AND UNCLE SAM, THE MOUNTAIN-CLIMBERS.  
The two cousins are swapping stories about their exploits in scaling the heights of fame.

From *Kladderadatsch* (Berlin).

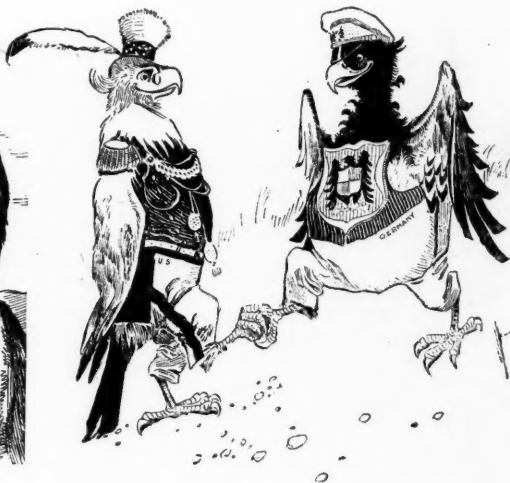


BRER LION AND BRER EAGLE.

"I ain't gwineter peck yo' tail, Brer Lion," sez Brer Eagle, sezee; "but aen agin, I ain't gwineter gush 'bout yo'. Brer Lion he 'low dey kin git 'long fine on dat track."

["He has never gushed over England; nevertheless, his admiration and respect for England are sincere." *Daily Chronicle* correspondent on President Roosevelt's Policy.]

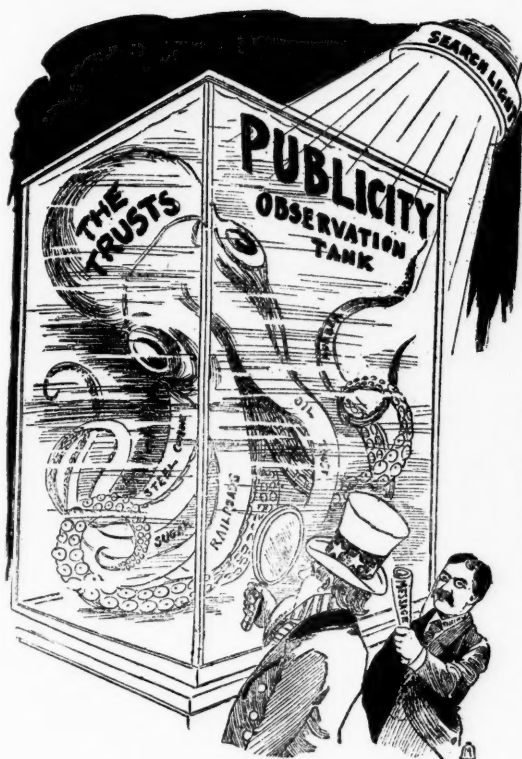
From the *Westminster Budget*.



"WIE GEHTS, LANDSMANN?"

None of President Roosevelt's qualifications appeals to the German people so much as his ability to talk their language. This circumstance is generally considered a happy omen for German-American relations.

Berlin cablegram to the *Record-Herald*, Chicago.



THE PRESIDENT'S PLAN.  
Make the octopus do business in a glass tank.  
From the *Eagle* (Brooklyn).



KAISER WILHELM: "ACH!"—From the *Herald* (Boston).



WORSE AND MORE OF IT.

JOHN CHINAMAN: "Melican man teara de fence down?"  
PRESIDENT ROOSEVELT: "Well, no; I was just thinking of adding these."—From the *Journal* (Minneapolis).



A FABLE: Once upon a time a Yankee and an Indian went hunting, and the result was the killing of one wild turkey and one turkey-buzzard. The Yankee appointed himself divider of the spoils and said to the Indian, "Either you take the turkey-buzzard and I'll take the turkey, or I'll take the turkey and you take the turkey-buzzard." From this fable we can trace the evolution of the reciprocity idea as it obtains among high-tariff men.

From the *Times* (Minneapolis).



DOES THE SENATE WANT TO BRING ABOUT THIS CONDITION?—From the *Plain Dealer* (Cleveland).



"SH-H-H-H! DON'T DISTURB THE TARIFF."  
From the *Journal* (Minneapolis).



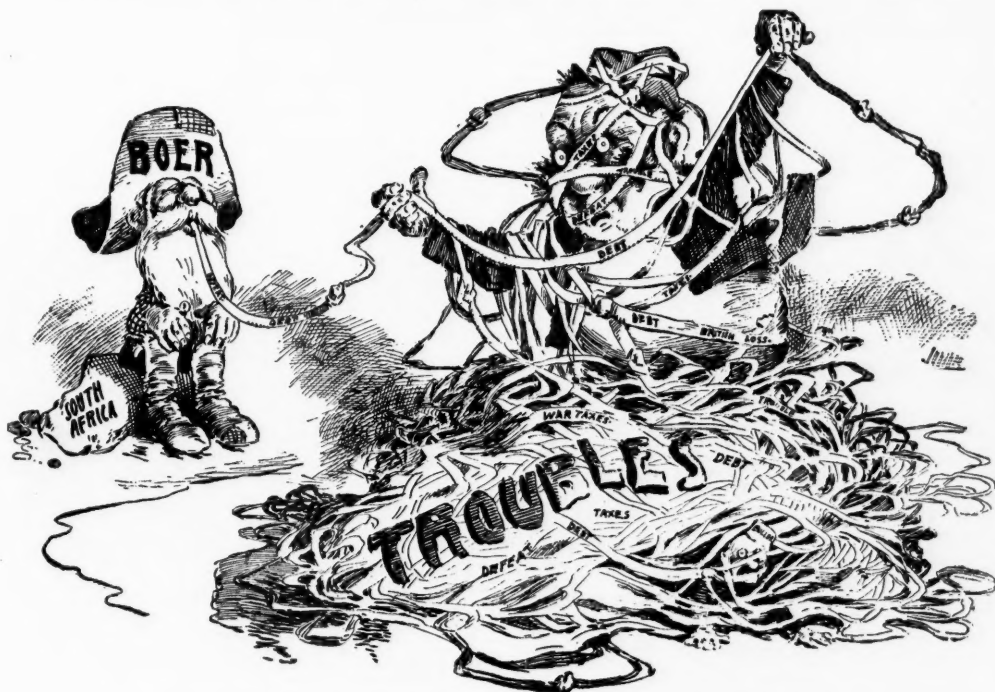
A POLITE CROWD.  
EACH TO THE OTHER: "You first, my dear friend; you first!"—From the *Journal* (Minneapolis).





THE TRIALS OF AN AMATEUR EMPIRE-BUILDER.

UNCLE SAM: "I reckon I'll have to squeeze a little harder to hold 'em down."—From the *Journal* (Detroit).

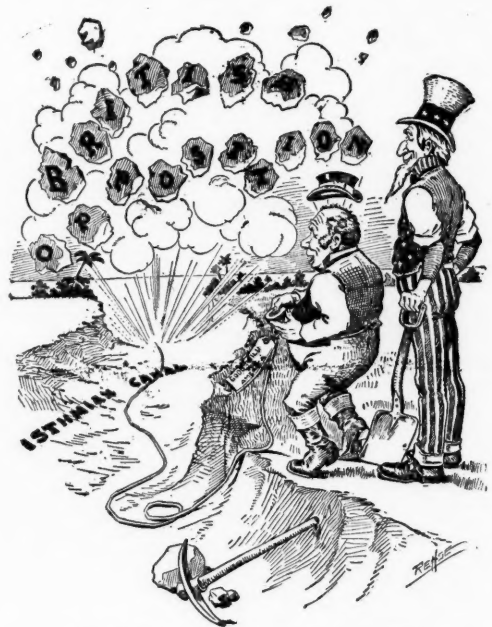


HOW AN OLD HAND AT EMPIRE-BUILDING MAY ALSO HAVE HIS TROUBLES.

JOHN BULL: "Bless me! I never saw so many knots and tangles."—From the *Plain Dealer* (Cleveland).



A NEUTRAL CANAL.

From the *Journal* (Minneapolis).

IT WAS THE LAST BOULDER IN THE DITCH.

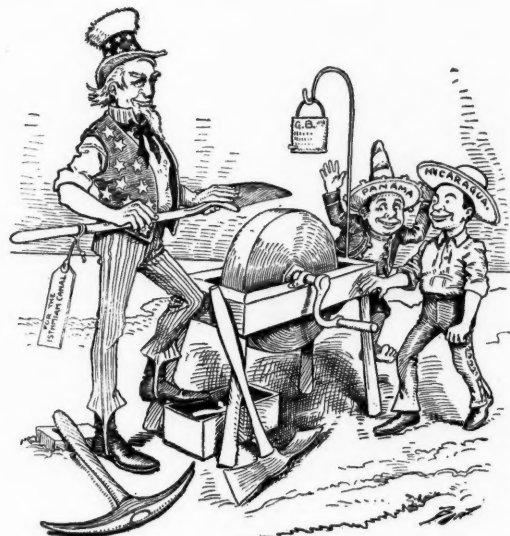
From the *Pioneer-Press* (St. Paul).

The paramount general topic of the month has been the relation of the United States to Central America and the isthmus, apropos of the signing of the treaty with England, the protection by our marines of the Panama Railroad, and the prospect of the quick passage in Congress of the Nicaragua Canal bill.



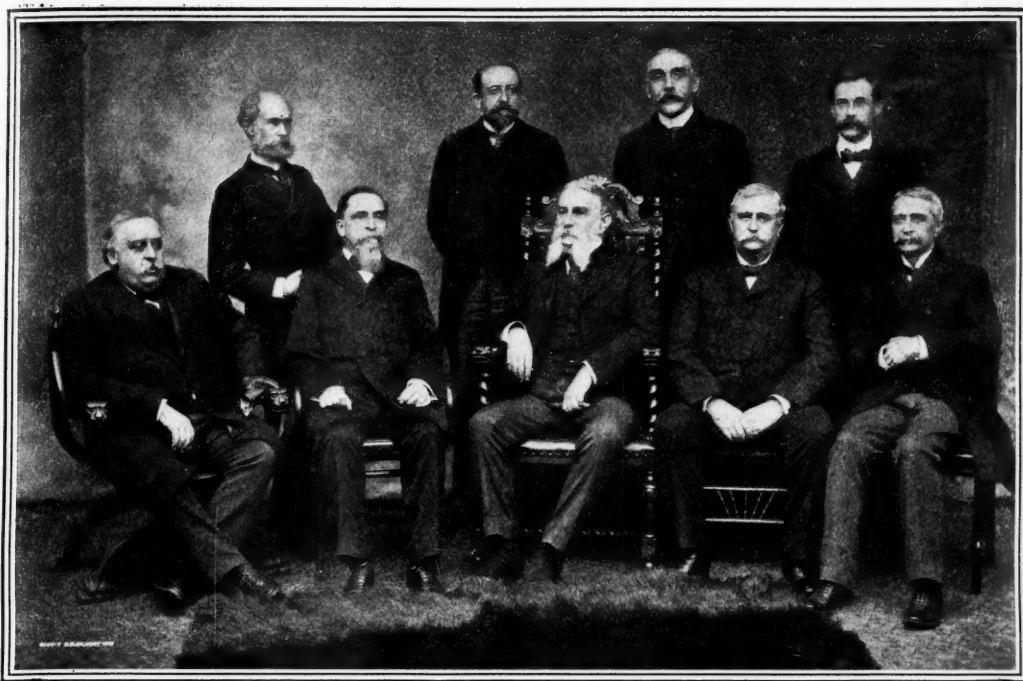
PERFORMING HIS DUTY.

"Move on; don't blockade the isthmus."

From the *Eagle* (Brooklyn).

A BOY TO TURN THE STONE.

UNCLE SAM: "Why, there seems to be two of them ready for the job."—From the *Journal* (Minneapolis).



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Lewis M. Haupt, C.E.      William H. Burr, C.E.      Lieut.-Col. Oswald H. Ernst, U.S.A.      Prof. Emory R. Johnson.  
 George S. Morison.      Hon. Samuel Pasco.      Rear-Admiral John G. Walker, U.S.N., President.      Alfred Noble, C.E.      Col. Peter C. Hains, U.S.A.

MEMBERS OF THE ISTHMIAN CANAL COMMISSION.

## THE ISTHMIAN CANAL.

### THE WORK AND REPORT OF THE COMMISSION.

BY EMORY R. JOHNSON.

(A member of the Isthmian Canal Commission.)

THE work done by the Isthmian Canal Commission was authorized by the river and harbor act passed March 3, 1899. In this law, Congress empowered the President to make a full investigation of all practicable locations for a canal across the American isthmus, and to determine the most feasible and practicable route across said isthmus for a canal, together with the cost of constructing and placing the same under the control, management, and ownership of the United States."

#### A TASK OF GREAT MAGNITUDE.

The task intrusted to the President was one of great magnitude, requiring the conduct of extensive surveys in Nicaragua and Costa Rica, on the isthmus between the cities of Colon and Panama, and at several points along the Isthmus of

Darien between the city of Panama and the mainland of South America. Hydrographic data had to be secured from an extensive region, the topography of large areas had to be ascertained and charted, and thousands of borings had to be made to determine the character of the material to be excavated, and to find safe foundations for the locks and dams and other requisite structures of great magnitude. The law furthermore called upon the President to ascertain for all canal routes what "rights, privileges, and franchises" were held by corporations, and what it would cost the United States to acquire possession of those rights and of the work done by the companies holding concessions. In general, the President was requested to examine all the facts bearing upon the location and choice of a route and "to report to Congress the results of such investigations, to-

gether with his recommendations in the premises."

To secure the information desired by Congress, the President, after holding the matter under consideration for three months, selected, without reference to political affiliations, a commission of nine experts. The navy was represented by Rear-Admiral John G. Walker, whom the commission made its president; from the army were detailed Col. Peter C. Hains and Lieut.-Col. Oswald H. Ernst, and from among the civil engineers of the country were chosen George S. Morison and William H. Burr, of New York; Alfred Noble, of Chicago, and Lewis M. Haupt, of Philadelphia. A lawyer, ex-Senator Samuel Pasco, of Florida, was selected with reference to the study of "rights, privileges, and franchises," and the writer of this article was placed on the commission to assist in investigating and reporting on the industrial, commercial, and financial aspects of the canal.

#### INSTRUCTIONS GIVEN THE COMMISSION.

In intrusting the investigation to this body of experts, President McKinley gave it broad and liberal instructions. The oral charge which he gave the commission, when the body called upon him at the beginning of its work, was: "You are to find the route." The written instructions transmitted from him to the commission by the Secretary of State were: "Your duties will not be limited by the terms of the act; but if any line of inquiry should suggest itself to you in the course of your work as being of interest or benefit, I am confident you will not fail to give it whatever attention it may seem to deserve. The President trusts that the commission will fulfill the important duties confided to them in such a manner that when their report is prepared it will embrace all the elements required for his own guidance, and for the final action of Congress, upon the subject of the location and construction of an interoceanic canal."

Acting in accordance with these liberal instructions, the commission has endeavored to make its work so comprehensive and so thorough in all details that in the future no question can arise regarding the location of the canal. It was felt by the commission that its report was to be the final one preliminary to construction, and it has endeavored to make its report a work that will be recognized for many years to come as a standard authority.

#### ORGANIZATION AND WORK OF THE COMMISSION.

The commission met for organization on June 15, 1899, and established permanent offices in Washington. To facilitate the prosecution of its

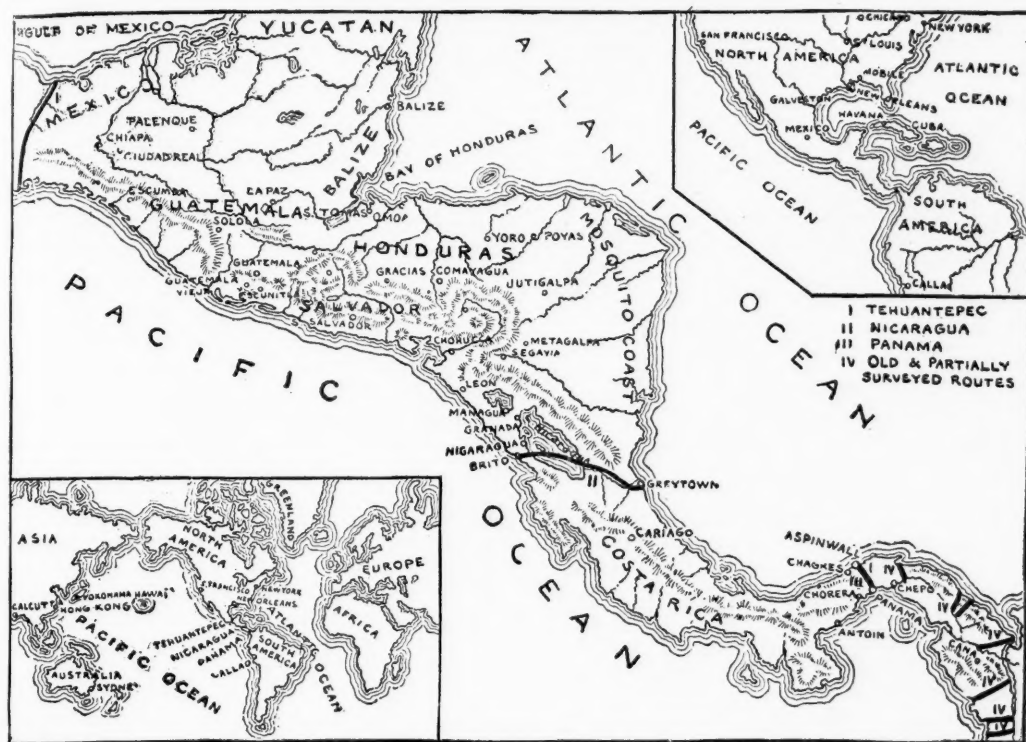
several lines of inquiry, five committees were appointed, each committee consisting of three men besides the president of the commission, who was *ex-officio* a fourth member of all committees. There were three engineering committees,—one on the Nicaragua route, one on the Panama route, and one on additional or Darien routes. In addition to these engineering committees, there was one on "rights, privileges, and franchises," and another on "the industrial, commercial, and military value of the canal." These several committees prosecuted their several lines of investigation, and laid before the full commission both the results of their work and the data upon which all their conclusions were based. The work of each committee was carefully gone over in detail by the full commission. The committees were merely auxiliaries to the commission, and not substitutes.

Much of the work of the commission had necessarily to be done directly by the full body. Soon after organization, it decided that a trip to Paris was necessary, because the records and data collected by the Panama Canal Company during the past twenty years were in the archives of the company in its Paris offices. This trip took between six and seven weeks of the commission's time in the summer and early autumn of 1899. Before starting for Paris, the commission had appointed a chief engineer for the Nicaragua route, one for the Panama surveys, and another for the Darien routes, and with the assistance of these chief engineers parties were organized and put into the field with detailed instructions.

On January 6, 1900, the commission sailed from New York for Greytown, Nicaragua, which point was reached on the 19th of the month. Five weeks were spent in Nicaragua, during which time the harbor problems were studied, all the camps of engineers were visited, additional instructions were given the division engineers in charge, and a careful study was made of the work being done by the engineers in charge of the hydrographic work and the borings. Ten days were spent by the commission at the capital of Nicaragua, where interviews were had with the President and higher officials concerning the question of concessions.

From Nicaragua the commission went by steamer to Panama. It made its headquarters at Colon, and during the fifteen days of its stay on the isthmus every important detail of the project was given a careful personal examination. When the commission left Colon, the chairman of the committee on the Darien routes proceeded along the Caribbean shore on the United States auxiliary cruiser *Scorpion*, which had some months previous been placed at the disposal of the com-





MAP SHOWING VARIOUS ROUTES CONSIDERED BY THE COMMISSION.

mission. This trip was taken for the purpose of visiting the engineering parties engaged in the surveys being conducted on that part of the Isthmus of Darien. The other members of the commission went to Port Limon, Costa Rica, and thence to the capital of the country, San José, where six days were spent in conference with the President and higher officials. From Costa Rica, the commission returned to New York. It was unable to visit the capital of Colombia because of the insurrection then in progress. Upon the request of the Department of State, however, a representative of the Colombian Government spent several days with the commission during its stay on the Isthmus of Panama.

#### RESULTS OF THE ENGINEERING INVESTIGATIONS.

No previous engineering work with reference to the location of a canal route has been done with thoroughness comparable with that insisted upon by the present commission. Among the distinctive features of this phase of the commission's work should be mentioned its examination of the Isthmus of Darien between the mainland of South America and the Panama Canal location. The narrowest portion of the isthmus lies in the

Darien region, and several men of high authority have long claimed that the most practicable route for the canal was to be found on the Darien portion of the isthmus, either in the neighborhood of the Atrato River or along what are known as the Caledonia Bay route or the San Blas location. The information obtained by means of the Darien surveys showed that the Atrato route was entirely out of the question, and established the fact that the Caledonia and San Blas routes are the only possible ones for a canal across the Isthmus of Darien, and that in the case of both of these locations the construction of a long tunnel would be necessary. The enormous cost of a tunnel, and the practical impossibility of so ventilating it as to make it a feasible passageway for ships of large dimensions, eliminated the Darien routes from consideration.

The choice lay between the Panama and the Nicaragua locations, and the detailed study of these two routes has shown that the engineering problems on the Nicaragua route are less difficult and less expensive than they had previously been supposed to be. The most difficult engineering feature of either of the two lines is the construction of the Bohio dam on the Panama location,

the commission having been unable to find a rock foundation for that structure that does not involve masonry work at a depth of 128 feet below the level of the sea. No foundation has yet been sunk to that depth. The commission believes, however, that the Bohio dam could be constructed without serious difficulty.

The extensive borings in Nicaragua resulted in finding a new location a few miles from Boca San Carlos, at Conchuda, for the large dam across the San Juan River. The dam on this site can be constructed in about four years after work is begun, or in less than two-thirds of the time it would have taken to have constructed the dam at Boca San Carlos. The locks on both routes have been located on good rock foundations, and every important engineering problem has been satisfactorily solved. There will be no engineering works of such difficulty or magnitude in Nicaragua as the construction of the Bohio dam and the excavation of the Culebra cut on the Panama line. The excavation of this cut would require about eight years, while it is believed that there is no single piece of work on the Nicaragua route which could not, under favoring conditions, be completed within four years after work is actually under way.

An examination of the two routes from the engineering standpoint shows that neither one possesses very decided advantages over the other. The Panama line is shorter and has fewer curves, and the character of the country traversed by it is more intimately known. On the other hand, the Nicaragua Canal has the advantage of a large natural body of water—Lake Nicaragua—and the construction of the canal involves no feature so difficult as the Bohio dam and the Culebra cut.

#### THE QUESTION OF CONCESSIONS.

The differences of the two routes are most pronounced in the matter of concessions. In the case of the Nicaragua line, there are no private corporations holding any concessions at present valid, and the United States is free to treat directly with Nicaragua and Costa Rica, both of which governments have on several occasions expressed their willingness to treat with us on the canal question. The Panama Canal Company controls absolutely the situation at Panama. It has a concession certainly valid until 1904, and which the company considers to be valid until 1910. Furthermore, the Panama Railroad is owned by the Panama Canal Company, and the concession under which this road was constructed has over fifty years to run. By its terms, no canal can be built in the neighborhood of the railroad without arrangements being made with the owners of the concession. It thus becomes neces-

sary for the United States to buy out the Panama Canal Company before negotiations with the Colombian Government can be consummated.

In order that the Isthmian Canal Commission might present to the President and to Congress all the information which it was instructed to collect, efforts were made throughout its work to secure from the Panama Canal Company a statement of the price which it would accept for its concessions and property on the isthmus. The company, however, did not desire to name a price. After having been pressed strongly and repeatedly by the commission to fix a price, the company, near the close of the commission's work, prepared an estimate of the value of its property on the isthmus, and submitted this statement, accompanied by considerable detail. The value placed upon its property by the company was \$109,000,000, a sum much in excess of what the United States could advantageously pay to secure control of the route. The commission estimated that the work done on the isthmus by the Panama Company and the railroad it owns would be worth about \$34,000,000 to the United States if our country were to acquire control of that route and execute it according to the project approved by the commission; that is to say, the work of execution would cost the United States \$34,000,000 less than if nothing had been done.

#### CHOICE OF ROUTES.

Whether the United States should adopt the Panama route or the one across Nicaragua and Costa Rica is a question to be decided by considerations of cost of construction and acquisition, expenses of maintenance and operation, and of the usefulness of the routes to the commerce of the United States and foreign countries. The engineering works of construction would cost about \$45,000,000 less at Panama than at Nicaragua, but there is no reason to believe that the rights and property of the Panama Canal Company could be secured at a price that would make the cost of the Panama route less than the cost of the Nicaragua Canal. The expenses of operation and maintenance are in favor of the Panama location. A study of this question by the commission indicates that these expenses would be about \$2,000,000 a year for the Panama line and about \$3,350,000 for the Nicaragua Canal. Against this difference in expenses of operating and maintaining are to be placed the greater advantages of the Nicaragua route as a highway for the commerce of the United States.

The Panama Canal being 49.09 miles in length, and the Nicaragua Canal 183.66 miles long, a ship would be able to pass through the former canal in less time than it would take to steam

from Greytown to Brito. As stated in the final report of the commission, "The estimated time for a deep-draught vessel to pass through is twelve hours for Panama and thirty-three hours for Nicaragua. . . . Except for the items of risks and delays" (that are liable to happen to a vessel passing through a restricted channel), "the time required to make the transit through the canals needs to be taken into account only as an element in the time taken by the vessels to make their passage between terminal ports. Compared on this basis, the Nicaragua route is the more advantageous for all trans-isthmian commerce except that originating or ending on the west coast of South America. For the commerce in which the United States is most interested, that between our Pacific ports and Atlantic ports, European and American, the Nicaragua route is shorter by about one day. The same advantage exists between our Atlantic ports and the Orient. For our Gulf ports, the advantage of the Nicaragua route is nearly two days. For the commerce between North Atlantic ports and the west coast of South America, the Panama route is shorter by about two days. Between Gulf ports and the west coast of South America, the saving is about one day.

"The Nicaragua route would be the more favorable one for sailing vessels, because of the uncertain winds in the Bay of Panama. This is not, however, a material matter, as sailing ships are being rapidly displaced by steamships."

#### INDUSTRIAL AND COMMERCIAL INVESTIGATION.

A thorough and detailed investigation was made into the effect which the canal will have upon the development of American industries and upon the promotion of American commerce. This elaborate study will be published in full as an appendix volume of the report of the Canal Commission. The text will be accompanied by thirteen industrial and commercial maps, which have been prepared with great care, and which will, it is believed, add much to the present public knowledge concerning the economic value of the canal. The scope of this investigation was made to include a careful study of the leading industries of the different sections of the United States, and special efforts were made by correspondence, travel, and conference to ascertain the use which would actually be made of the canal by producers and manufacturers engaged in all our more important industries. The testimony received from the business world showed that all sections of the United States would make extensive use of the proposed waterway, and that its benefits would be shared by all parts of the country.

Special efforts were made to ascertain the effect which the canal would have upon the traffic of American railways. Numerous conferences were had with railway officials, and information was obtained by correspondence both with railway officials and with shippers. As to the business of the railway systems in the territory between Chicago and New York, and of those in the Southern States, the evidence is practically unanimous that the canal will be beneficial. As regards the effect of the new water route upon the railroads west of the Mississippi River, the testimony is divided. That the canal will be a rate-controlling factor of wide-reaching importance is generally admitted, and, naturally enough, is feared by those railway officials who do not think the waterway will bring much new and compensating business to the railroads. Here is the crux of this question,—will the canal make business for the transcontinental railroads? Some of the transcontinental officials say yes, and some say no; but the experience of history has always been that the improvements in facilities for water transportation have resulted in the diversification and distribution of industry and added to the volume of business done. Some of the railway officials with whom I have conferred believe that this experience will be repeated by the opening of the isthmian waterway. A well-known president of one of the Western roads expressed his thought clearly and concisely in his reply to the commission's inquiry. "In a general way, my idea has been, and is, that the construction of the canal would be beneficial to the Mississippi Valley, as well as to the Pacific Coast. I incline to think cheaper transportation for heavy freights between the Mississippi Valley and the Coast would so increase general business that the railroads would get back, out of high-class freights and passengers, more than they would lose by the loss of low-class traffic where time is not important."

#### TONNAGE OF AVAILABLE CANAL TRAFFIC.

A detailed statistical study revealed the fact that 4,574,852 vessel-tons, net register, might have used the canal to advantage during the year 1899. This total was compared in detail with a total obtained of a statistical investigation made in accordance with entirely different methods by the new Panama Canal Company. Their figures were 4,685,575 tons. Inasmuch as these two totals did not cover exactly synchronous periods, their approximate equality is evidence of the essential accuracy of each total.

The tonnage of available canal traffic in 1899 was 25.1 per cent. greater than the tonnage available ten years earlier. By predicting for the

future a rate of increase in available traffic no greater than the rate was during the decade ending in 1899, a traffic of nearly seven million tons will be available by the time of the probable completion of the canal.

"In all probability," as the commission's report states, "the future increase in that part of the world's commerce that would use an isthmian canal will be more rapid than the past growth has been, because in the Pacific countries of America, in Australia, and in the Orient the industrial progress of the next two decades promises to be much greater than that of the past twenty years has been. The rate of increase, 25.1 per cent. per decade, prior to the opening of the canal, probably undervalues what will occur. It is certainly a conservative estimate."

What the rate of increase in the traffic of the canal will be after the waterway has been opened for commerce is a difficult matter to estimate. The best basis for reasoning in regard to the growth of the American canal traffic is to be found in the development of the tonnage of the Suez waterway. It is not to be expected that the American route will enjoy such a rapid rate of growth in tonnage as the Suez waterway experienced, because the initial tonnage in the case of the Suez route was small. If we omit the growth of the Suez traffic during the first ten years, and take the increase of the second decade as a basis for the estimate for the American canal, and assume that the increase in the commerce using the American isthmian waterway will be only half as rapid as was the growth of the Suez tonnage from 1880 to 1890, the net register tonnage of the vessels using the American canal at the close of the first decade of its operation will amount to approximately 10,500,000 tons.

#### TOLLS AND TRAFFIC.

A toll of about one dollar per ton net register could be levied upon the commerce using the isthmian canal without much restricting the amount of traffic through that waterway. This charge is about one-half of that now paid for the use of the Suez Canal. A toll considerably higher than one dollar per ton net register would probably yield a larger maximum revenue than would a toll of one dollar; but in fixing the charges for the use of an isthmian canal, owned and operated by the United States Government, the principle of maximum revenue could not wisely be followed. The function of the canal as a toll-gate will be a minor one as compared

with its service in promoting the industrial and commercial progress and general welfare of the United States. The language of the final report of the commission on this point is that "An annual traffic of 7,000,000 tons at one dollar per ton will produce a revenue of \$7,000,000. The expenses of operating and maintaining the Panama Canal are estimated at about \$2,000,000 per annum, and those of the Nicaragua Canal at about \$3,350,000. Upon this basis, the net revenue by either route would not be sufficient, at the opening of the canal, to pay interest upon the capital invested and compensate a private corporation for the risks involved. It is the opinion of the commission, however, that there are other considerations more important than revenue. It may even be expedient for the United States to reduce the tolls to an amount which will barely cover the expenses of operation and maintenance. A large increase of traffic in the future is probable, and the revenue producing value of the canal would then be proportionately greater."

#### CONCLUSION REACHED BY THE COMMISSION.

The commission's unanimous conclusion, as the result of its entire investigation, was that "After considering all the facts developed by the investigations made by the commission, and the actual situation as it now stands, and having in view the terms offered by the new Panama Canal Company, this commission is of the opinion that 'the most practicable and feasible route' for an isthmian canal, to be 'under the control, management, and ownership of the United States,' is that known as the Nicaragua route."

The early inauguration of the work of constructing the isthmian canal seems assured. The delays of the past have been annoying to many patriotic citizens who have realized the great service which the waterway would render in promoting the industrial and commercial progress of our country. The postponement of the enterprise until the present time has, however, enabled the American people to secure detailed information in regard to the many difficult technical problems concerning which knowledge was essential to an intelligent choice of routes and to the maturing of proper plans for the execution of the great work. It would be difficult to find another public undertaking concerning which the preliminary investigations have been so comprehensive and thorough as have been those made by the United States Government for the location and construction of an isthmian canal.

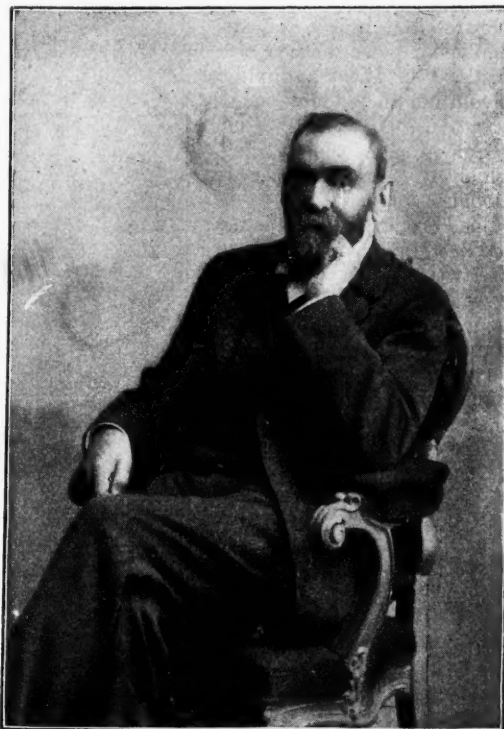




## THE NOBEL PRIZES AND THEIR FOUNDER.

**A**LFRED BERNHARD NOBEL, the man who left a fortune of nearly ten million dollars in order to reward those who have rendered most service to their fellow-creatures, was born at Stockholm, on October 21, 1833. His father, Emmanuel Nobel, was a man of considerable eminence in his own day. Emmanuel Nobel was the founder of the Nobel firm. He was a man of great industry and talent, who, after being educated as an architect and appointed professor of geometry when only twenty-six, failed to find the true bent for his genius until some years later, when he established himself at St. Petersburg, undertook the manufacture of torpedoes, and established great engineering and shipbuilding works. There he prospered for nearly twenty years, until after the Crimean War the enfeebled resources of the Russian Government no longer afforded him sufficient business to make it worth his while to remain on the Neva. In 1859, he left his business to the second of his sons, Louis, and returned to Stockholm with the rest of his family, where, with the aid of his sons, he betook himself to the study and the fabrication of explosives.

Up to that time, the ordinary black blasting powder was the only explosive in use either in war or in industrial operations. Nitro-glycerine had been discovered many years before, in France, but it was so extremely dangerous that it was practically useless. Between 1861 and 1862, Emmanuel Nobel discovered a method of preparing nitro-glycerine which rendered it possible to make practical use of it. In October, 1863, Alfred Nobel, the son, took out the first patent for the manufacture of an explosive composed of nitro-glycerine and of ordinary powder. In 1864, he took out a second patent, but for some years the use of nitro-glycerine was attended by many accidents. One of the worst of these took place in 1868, in Quena Street, in Brussels, when the Belgian representative of the firm and nine other persons were blown to atoms. Four years before, a younger brother of Alfred, Oscar Emil, then a young man of one-and-twenty, lost his life in an explosion which destroyed their factory at Helleneborg, near Stockholm. An explosion near Newcastle-on-Tyne, when the sheriff, Mr. Mawson, and several others lost their lives, created a great prejudice in England against the use of this high explosive, and various proposals were made in many countries for prohibiting its use, on the score of the danger involved.



THE LATE ALFRED NOBEL.

### THOR'S HAMMER REDISCOVERED.

In 1867, however, Alfred Nobel invented dynamite—a compound of nitro-glycerine with Kieselgühr, a very finely powdered siliceous substance, composed of the shells of fossilized infusoria. It had the capacity of absorbing three times its weight of nitro-glycerine. From being the most dangerous, nitro-glycerine, thus compounded, became one of the safest of all explosives. It could be handled with much less danger than gunpowder, and neither damp nor heat had any influence upon it. In one or other of its forms, it gained almost immediate recognition as the long-lost hammer of Thor, and for nearly thirty years it has been ceaselessly employed in all blasting operations, in tunneling mountains, in blasting rocks, and, in short, in doing everything that Thor used to do in his contest with the giants of Jötunheim. Kieselgühr contributes nothing to the explosive force of dynamite, and Nobel improved upon it by his

gelatinous nitro-glycerine, which he patented in 1876. Thirteen years later, he patented ballistite, the first of the high explosives which inaugurated the era of the smokeless powder that was destined to effect so rapid a revolution in the methods of war.

Some idea of the extent to which dynamite is used in modern industry may be gained from the fact that in the last ten years of Nobel's life twelve thousand persons were constantly employed in its manufacture, and that the total output was valued at very many millions per annum. It is very remarkable that in twenty-five years no strike ever took place in any of the factories controlled by the Nobel firm.

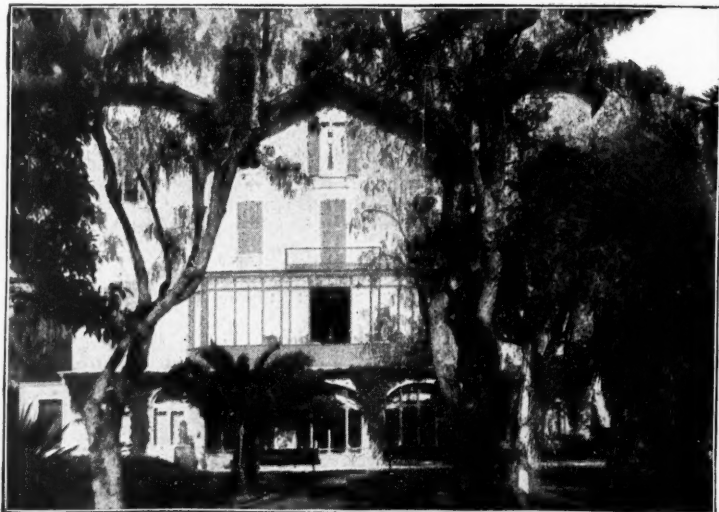
#### NOBEL'S INTEREST IN SCIENCE.

In the development of this gigantic industry, Alfred Nobel became a cosmopolitan European. He lived for a long time in Paris, from which at last he was driven to San Remo, where he established a great laboratory and a villa which he called "my nest," but which was always known as the "Villa Nobel."

He was a man whose interest in science was by no means confined to the manufacture of explosives. One of his discoveries, of which no use has yet been made, was the invention of artificial gutta-percha, the value of which in these days of motor cars may rival that of dynamite. He also manufactured cannon, and was associated with his brother in the development of the petroleum deposits at Baku, in the Caucasus. He left the development of the petroleum industry chiefly to his brother Louis. One of the last things that he did before he died was to subscribe half of the sum necessary for equipping André on the balloon expedition to the North Pole which terminated so disastrously for the intrepid explorer.

#### AN OLD WORLD MILLIONAIRE WITH MODERN IDEAS.

Alfred Nobel never married. The unrelenting energy and the incessant activity which compelled him to flit hither and thither from Italy to Sweden, and which absorbed all his time in the recesses of his laboratory, left him no leisure for the pleasures of domesticity. All his affections, says Prof. Louis Henry, in the *Revue des Questions Scientifiques*, were concentrated upon his mother.



THE VILLA NOBEL AT SAN REMO, ITALY.

She was the idol of her sons, who regarded her with the most affectionate veneration. She died in 1889, at the age of eighty-six. Her son Alfred died seven years later, at San Remo, at the age of sixty-three.

Alfred was a man of delicate health, of retiring disposition, singularly devoid of ostentation or pride. As the result of his prodigious success in the creation of the great business which has revolutionized modern industry, he acquired a fortune which was estimated on his death at \$9,000,000. The question of the disposition of this great fortune naturally occupied his attention in the closing years of his life. Like many childless men, he entertained very sound views as to the unwisdom of leaving large sums to relatives. Although a very wealthy man, so far as Old World ideas go, he was a pauper compared with Mr. Carnegie, who has thirty times that sum of money to give away in his lifetime; but the burden of distributing \$9,000,000 pre-occupied the attention of Alfred Nobel.

As one of his executors, M. Sohlman, the engineer, has declared, Nobel strongly disapproved of any one enjoying great wealth without having gone to the trouble of acquiring it, "simply because he was his father's son or his uncle's nephew." He considered that the result of possessing riches without personal labor was to beget idleness. "Do not reckon upon my possessions," he said to his relations. "After my death they will not go into your pockets."

Nobel said to Strehlenert and Hwass shortly before his death, in 1896: "I am a thorough Social Democrat, but with moderation. Experi-

ence has taught me that great fortunes acquired by inheritance never bring happiness; they only tend to dull the faculties. Thus, any man possessing a large fortune ought not to leave more than a small part of it to his heirs, not even to his direct heirs,—just enough to enable them to make their way in the world. It is an injustice to leave them a great sum of money which they have not themselves deserved, which favors idleness and prevents the natural development of the faculty of personal initiative which is in us,—the tendency to create an independent position for one's self."

A few months before his death, Nobel said to M. Waern: "I could never leave anything to a man of action. I should expose him to the temptation of ceasing to work. On the contrary, I would willingly help a dreamer who might have got into difficulties."

#### TERMS OF THE GREAT PRIZE FUND.

In order to carry out these ideas, he made a will in which he left the whole of his fortune to found a prize fund; the annual interest on which was to be divided into five equal portions, which were to be distributed every year as rewards to the persons who had deserved best of mankind in five departments of human activity. The clauses in his will which govern the distribution of these prizes are as follows:

The entire sum will be divided into five equal parts, one to go to the man who shall have made the most important discovery or invention in the domain of physical science; another to the man who shall have made the

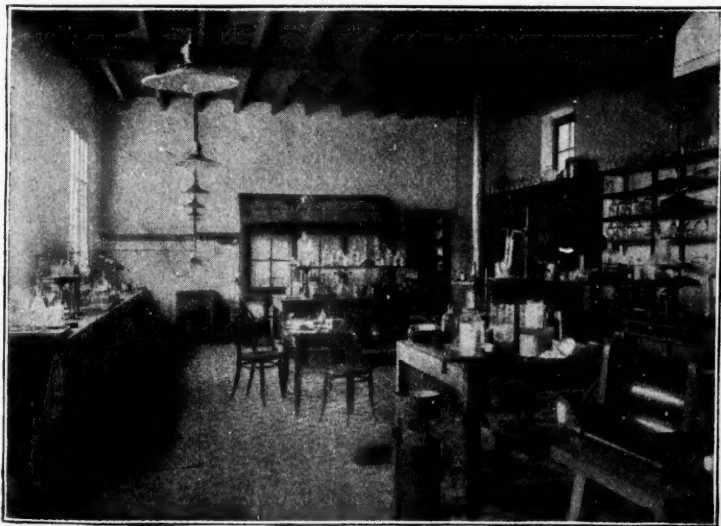
most important discovery or introduced the greatest improvement in chemistry; the third to the author of the most important discovery in the domain of physiology or medicine; the fourth to the man who shall have produced the most remarkable literary work of an idealistic nature; and, finally, the fifth to the man who shall have done the most or the best work for the fraternity of nations, the suppression or reduction of standing armies, and the formation and propagation of peace congresses.

The prizes shall be awarded as follows: For physical science and chemistry, by the Swedish Academy of Sciences; for physiological or medical work, by the Caroline Institute at Stockholm; for literature, by the Stockholm Academy; and for peace work, by a committee of five members elected by the Norwegian Storting.

It is my express desire that, in awarding the prizes, no account shall be taken of nationality, in order that the prize may fall to the lot of the most deserving, whether he be Scandinavian or not.

#### REWARDS TO SCIENCE AND LITERATURE.

Nobel's object in distributing his wealth in this fashion was due to the observations which he had made in the course of his busy life. He saw that the rewards for pure science were very few. When your man of science can patent his invention and apply it directly to industrial processes, he can make a great fortune; but many of those who have made the greatest discoveries have lived and died very poor men. He wished, therefore, to secure independence to those pioneers of science who devoted themselves solely to the work of research. He wished not only to recompense them for the work which they had done, but more especially to afford promising talents an opportunity for still further development. He lamented the fact that the profits of new discoveries very seldom accrued to those who made them. Being a great chemist and physicist, it was natural that he should have given first place to discoveries in the regions which he had made his own. He was a great admirer of Pasteur, and his own delicate health compelled him to take a keen interest in medical science. Hence the third prize, which was awarded for discoveries in medicine or in physiology. The fourth, which has attracted singularly little attention, might have been expected to have elicited most discussion. Professor Henry says that in the



INTERIOR OF NOBEL'S LABORATORY AT SAN REMO.

closing years of his life Nobel was much occupied in the reading of poetry, and was specially devoted to that of Byron. It was this which led him to offer a prize for idealistic literature. Professor Henry thus explains what he conceives to be the meaning of Nobel in restricting his prize to idealistic literature. This qualification, says he, testifies at once to the excellence of his taste and the nobility of his character. In our disturbing epoch, when under the name of art so many unclean things are admitted and excused, it is due to the honor of Nobel to emphasize the extreme care which he has taken to specify that unobjectionable and pure literature alone has any right to his bounty.

THE INVENTOR OF DYNAMITE A PROMOTER OF  
UNIVERSAL PEACE.

The fifth prize is that which has attracted far the most attention throughout the world. It was that which was selected by Nobel in order to testify to his devotion to the cause of international peace. At one time, indeed, he is said to have remarked that he wished to devote the bulk of his fortune to founding this prize. In his will, however, it ranks last of the five objects among which the fortune must be equally divided. His idea was thus expressed: "I would like," he said, "to dispose of most of my fortune in founding a prize, to be given to whoever had made Europe make the greatest advance toward the idea of universal peace." Some people imagine that this bequest was prompted by a feeling of remorse at the thought of the extent to which high explosives had been used in warfare. Nothing was further from Nobel's mind. He was very much disposed to believe that the more you increase the deadliness of weapons the more you diminish the chances of war. Certainly, the invention of smokeless powder has done much to render the old style of war impossible.

Nobel was a true European. Born in Sweden, living many years in France, and carrying on a great factory in Italy, he was constantly reminded of the absurdity of the present state system of the Old World. He believed in the United States of Europe, and wished to hasten the day when the armed anarchy of the Old World could be superseded by the reign of reason and of law. Therefore, for all time to come, every year the sum of about \$40,000 will be given away as rewards to the person, institution, or society who or which has done most in the preceding year for promoting the fraternity of nations, for the suppression or reduction of standing armies, as well as for the formation and propagation of congresses of peace.

PROCEEDS OF THE WILL.

Nobel's will might have been disputed if all the relations had joined together in contesting it. But the head of the Nobel family, Emmanuel Nobel, refused to oppose the execution of the wishes of his uncle. Much discussion took place as to the claims of the other relatives, and a sum of \$100,000 was set aside for their use. The articles were then carefully drawn up for the Nobel Foundation, which received the royal sanction on June 29, 1900. The year 1901, therefore, was the first in which the money could be distributed.

The sum originally left by Alfred Nobel is chiefly invested in the public funds of England, France, Italy, Russia, and Sweden and Norway. Part of it, also, was invested in landed estate in France, Italy, and Sweden. The total sum amounted to \$9,200,000, which, being reduced by taxation, ultimately realized about \$8,400,000. If invested at 3 per cent., it would bring in about \$250,000 a year, which, being divided into five equal parts, would realize \$50,000. There are, however, some deductions for costs of administration and other things, and the amount available for each prize in 1901 was \$40,424, while the amount available for administration, library, and institute for each division was \$13,475.

RULES GOVERNING THE DISTRIBUTION OF PRIZES.

The prize for peace is awarded by a committee appointed by the Norwegian Storting. This committee consisted, in 1901, of the following members: Mr. B. Gilz, Mr. Steen (prime minister), Mr. John Lund, of Bergen; Björnstjerne Björnson, the poet, and Mr. J. Löfvland, minister of ways and communications.

In the statutes of the Nobel Foundation, the following rules have been framed, governing the distribution of the prize of peace:

The clause in the will providing that the annual distribution of prizes is only to be for work accomplished "during the year just past" is to be interpreted as meaning that the awards shall be for the most recent results of activity in the department named in the will, whereas less recent work will only be taken into account when its importance has been lately demonstrated. Each of the corporations with which the awards rest must decide whether the prize awarded can also fall to the lot of an institution or a society.

At the meeting of the committee, which takes place on the anniversary of the donor's death (December 10), the corporations which have to make the awards must publish the names of the recipients, to each of whom they must hand a check for the value of the prize, as well as a





M. SULLY-PRUDHOMME.

(Winner of the Nobel prize for idealistic literature, 1901.)

diploma and a gold medal bearing the effigy of the donor, with an appropriate inscription.

The recipient, unless in any way prevented, must within six months of the committee meeting hold a public meeting on the subject of the work for which he has been awarded the prize. This meeting will take place at Stockholm, or, in the case of the prize for peace, at Christiania.

## FIRST AWARD OF NOBEL PRIZES.

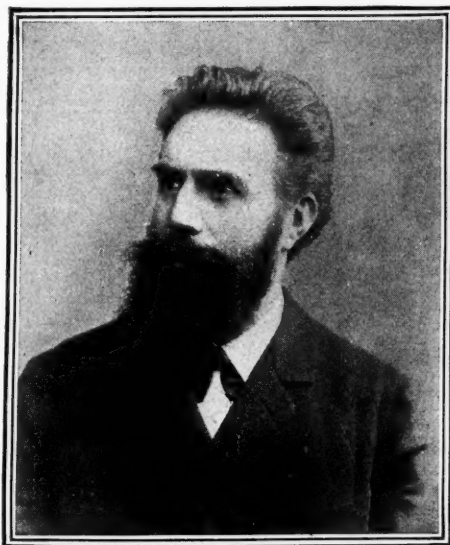
The award of the Nobel prizes for 1901 was officially announced on December 10. The committee on the prize for the encouragement of peace and arbitration reported to the Norwegian Storting that the prize had been equally divided between Dr. Henry Dunant, the Swiss physician, whose name had been presented for the honor by the Swedish Riksdag, and Frederic Passy, the venerable French advocate of international amity, and founder of the Universal Peace Union. M. Passy, who is now in his eightieth year, has been active in the promotion of the peace cause since he was twenty-five years old. When the announcement of the award was made, Dr. Dunant, to whom half of the prize, or \$20,212, was given, was reported as ill and destitute in a Swiss hospital.

The medical prize for 1901 went to Dr. Emil Behring, professor at Marburg, Germany, and the discoverer of antitoxin for diphtheria. In the department of chemistry, Dr. J. H. Van't Hoff, a native of Holland, who has held a professor-

ship for the past six years in the University of Berlin, received the prize. The importance of Van't Hoff's work became known to the scientific world about the year 1887. He was for some time a modest professor of physical chemistry at Amsterdam. While there he contributed largely to the world's knowledge of molecular physics, and is regarded as the founder of a new system of stereo-chemistry. He has received honorary degrees from Harvard and the University of Chicago. Last summer he visited the United States. Van't Hoff, who is now in his fiftieth year, spends most of his time in research, under the patronage of the German Government. He is interested especially in an inquiry into the saline constituents of sea water.

The Swedish Academy honored another man of Dutch blood in selecting William Röntgen to be the recipient of the prize in physics. Röntgen, who is now in his fifty-seventh year, became famous the world over, about six years ago, as the discoverer of the X-rays. He has been a professor at Marburg, Germany, for more than twenty-five years.

The Stockholm Academy conferred the literary prize on the French poet, Armand Sully-Prudhomme. The distinguished man of letters was born in 1839, and for the past twenty years has had a seat in the French Academy. Besides his volumes of verse, of which "Justice" was the first to appear, M. Sully-Prudhomme's essay on "Expression in the Fine Arts" is perhaps his most notable production.



DR. WILLIAM RÖNTGEN.

(Winner of the Nobel prize in physics, 1901.)

## BERTHELOT, THE NESTOR OF MODERN CHEMISTRY.

**I**N the last number of the REVIEW OF REVIEWS, allusion was made to the gathering of men of science at Berlin to commemorate the eightieth birthday of Dr. Rudolph Virchow, the distinguished German pathologist and publicist, in October last. On November 24, a similar gathering took place at the Sorbonne, in Paris, in honor of the great French chemist, Marcelin Berthelot. It was the fiftieth anniversary of the publication of M. Berthelot's first memoir. That day marked the completion of a half-century continuously devoted to science under the official recognition and patronage of the French Government. It was such a jubilee as has rarely been observed in any country, and it was wholly creditable, alike to French genius and to the far-seeing munificence of French administration which made a career like Berthelot's, in the service of his government, possible.

Pierre Eugène Marcelin Berthelot has lived his days in Paris, where he was born, on October 25, 1827. In his undergraduate days, he early

gained distinction, not alone in scientific studies, but in history and philosophy as well. At the age of nineteen, Berthelot won an honor prize in philosophy. From that time on, however, he devoted himself to natural science. He was appointed, in 1851, assistant in chemistry at the Collège de France—a position which he held for nine years.

Berthelot's work during this early period is to be traced in the successive memoirs that bear his name. He was chiefly concerned with the artificial production of natural products. Before Berthelot's time, it had been assumed by chemists that the so-called organic substances were the products of a mysterious "vital force," that they were quite incapable of reproduction by physical agencies acting under mechanical laws. Berthelot set out to prove, by actual experiment, the hollowness of such an assumption. While acting as M. Balard's assistant at the Collège de France, he succeeded in producing alcohol from illuminating gas and water. This was followed by a series of important experiments, known to chemists as the synthesis of the carburets of hydrogen. From mineral substances he was able to produce compounds that had been regarded by the earlier chemists as the exclusive handiwork of Nature.

It was in 1858 that Berthelot made public the results of these experiments, and three years later the Academy of Sciences awarded to him the prize founded by Dr. Joecker, a Swiss physician who practised his profession in the city of Mexico, for the encouragement of researches in organic chemistry. In the following year, Berthelot effected the direct combination of carbon with hydrogen, forming acetylene. In this experiment he passed a current of illuminating gas between the poles of an electric arc light.

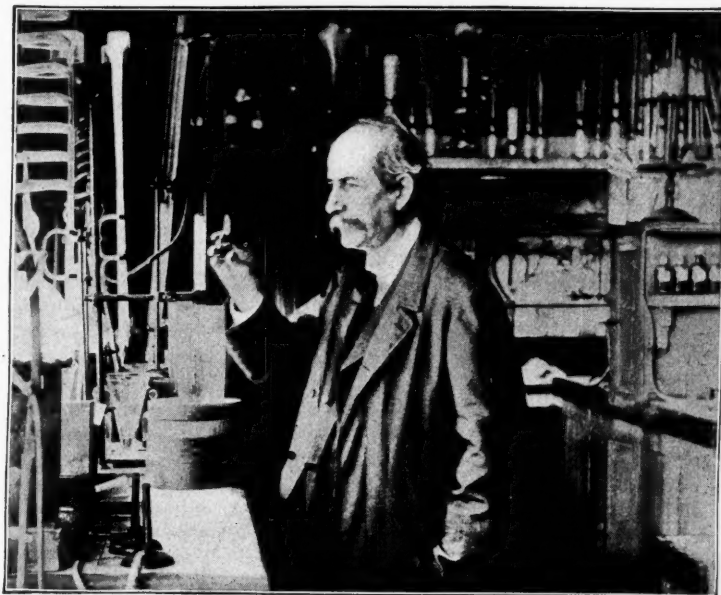
Meanwhile, Berthelot had been appointed to a professorship of organic chemistry at the College of Pharmacy. In 1863, however, a similar chair was founded by the government in the Collège de France, with Berthelot's incumbency especially in view, and on that endowment his researches have been carried on almost without interruption down to the present day. How fruitful have been these researches is barely indicated by the fact that modern science looks upon Berthelot as virtually the creator of that branch of chemical mechanics which is now known as thermo-chemistry. He was a pioneer,



M. MARCELIN BERTHELOT.  
(From his latest photograph.)

for example, in accomplishing the liquefaction of gases. Few chemists have seen the results of their discoveries developed so extensively in the world of commerce, but not a dollar of profit from it all has come to Berthelot. Not one of his discoveries has been patented. At present he is engaged in experiments dealing with the electrical stimulation of plant growth.

During the siege of Paris, in the Franco-Prussian War, Berthelot rendered important service to his native city. He assisted in the casting of cannon and in the making of nitro-glycerine, dynamite, and gunpowder. He became president of the commission on explosives that served the government in that hour of distress. He had seen two revolutions before the Commune of 1871, and had never been identified with the radical element in French politics. On the other hand, such political preferment as he has had in his long life he owes to the present republic. He was made a life Senator in 1881, and five years later he became minister of public instruction for a few months in the Goblet cabinet. It was at this time that he visited Algeria in the interest of colonial educa-



M. BERTHELOT IN HIS LABORATORY.

tion. In the Bourgeois cabinet of 1895, Berthelot had the portfolio of foreign affairs. He has traveled in Germany, Italy, England, Denmark, and Sweden, and is a member of the principal academies and scientific societies of Europe. Only recently has he been offered a seat among the Forty Immortals of the French Academy. The memoirs that he has written number more than six hundred, and his contributions to general literature have been by no means slight.



M. BERTHELOT'S JUBILEE MEDAL, THE WORK OF THE ARTIST CHAPLAIN.

# HIGH-SPEED ELECTRIC LOCOMOTION.

BY THOMAS COMMERFORD MARTIN.

JUST fifty years ago, an electric locomotive devised by Prof. C. G. Page, of the Smithsonian Institution, achieved a notable trip on the Washington & Baltimore Railroad. Deriving current from a crude outfit of nitric-acid batteries, and with reciprocating motors of like inapplicability to the task before them, this machine actually made a speed of nineteen miles an hour. A run to Bladensburg, about five and one-half miles, was done in thirty-nine minutes; while the round trip, including seven halts, the rupture of three cells, and sundry negotiations with stray cattle, occupied one minute less than two hours. That marvelous locomotive then and there disappeared from history; but the effort to operate by electricity on main lines of railroad has gone on with growing success and rising hopes, until the attention of the whole world is arrested by the German experiments at Zossen, yielding a speed with an actual car of one hundred miles, and easily capable of doing one hundred and forty miles, an hour. For the United States, the change suggested is immense. The provincialism and State pride of the last century fade before the prospect. To breakfast in Boston on Sunday and lunch in San Francisco on Monday; to live in Philadelphia and yet be able with ease to do business daily in New York,—these attained electrical possibilities are of the kind to “give us pause” while depriving us of it.

The problem of applying electricity to “railroads,” as distinguished from “street-car lines,” has been attacked in various ways. At the present moment, the situation is complicated by the efforts making to extend the domain of the street railway out into the rural districts, putting it in competition with the ordinary old-fashioned commuter service. There are now American trolley networks in such States as Ohio and Indiana that can boast a thousand miles of road, often with ballasted track, private rights of way, cars speeding at fifty or sixty miles an hour outside city limits, and all the latest refinements, including even sleeping-coaches. Owning local systems every few miles as feeders of traffic, these new networks are most formidable competitors with adjacent steam lines, many sections of which, as in New England and the far West, have already lost nearly all their short-haul passenger patronage. To what extent the innovation has cut steam revenue, it is hard to say.

Some of the railroads have frankly admitted heavy declines, and it is but common observation that the distinct trend of this trolley development is to leave to the steam roads mainly their through traffic and the haulage of freight—though not by any means all of the latter. That at some future date these vigorous young electric roads may become feeders again because of the upbuilding of the sections through which they pass is by no means improbable, but in Europe, as here, steam-railway managers are complaining of trolley competition, and sometimes, with poor judgment, seeking to check it. Early last century, the steam railroad, now so perfect and the most magnificent achievement of modern engineering, had to endure the same opposition that is offered the trolley, and for pretty much the same reasons.

If a main railroad, under this rather curious economic *régime*, losing its old commuter travel at a range of 30 miles and of one hour, could suddenly develop new commuter patronage at 140 miles and one hour, it would certainly lay hold again on the future, though the imagination were daring and prophetic that could determine all the tremendous social and industrial results. Obviously, two contradictory influences will come into play when Zossen speeds regulate our time-tables. The ability to get out of town 30 miles in 15 minutes must greatly expand urban territory. On the other hand, cities now 100 miles or more apart, each subserving the needs of its region in undisputed isolation, will tend to merge with irresistible centripetality. Greater New Yorks will flourish all over the land, but at the expense of local centers now reigning supremae, so that the number of cities must inevitably be reduced. Here are contingencies for speculation not so idle; meantime, the actual work that way directed is now going on. It is that which here concerns us, and the means proposed for accomplishment.

A good deal is heard about the “third rail” on main lines of railway, as though it were a novelty. There is in reality little that is new about it. Leo Daft and Frank Sprague used it long ago on the New York elevated, and its use there is but a reappearance. It was also employed across country, but in all these earlier instances a safe low-pressure current was furnished, so that no one stood in peril either in the generating plant or along the line. Low pres-

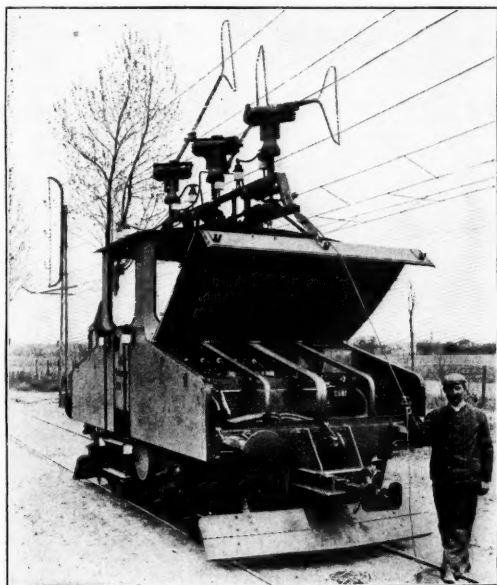


sure meant, however, a large wire to carry the current to the rail, and even with copper at twelve cents a pound electrical engineers began to put their pressures up in order to economize on the cost of their circuits. Hence, the great bulk of trolley work up to date, all the world over, has been done, not at the innocuous 110 volts of the incandescent lamp and fan motor, but at the tingling, jarring pressure of 500 to 600 volts. This sufficed for most urban systems, but when the real-estate operator, seeing the grand opportunity, began to negotiate for a spur to his breezy fig-vine plateau ten miles beyond the city line higher pressures again were needed. Here the alternating current came in; for while the direct current was desirable for the motor mechanism, it could not be delivered in bulk or economically at the longer range for heavy work. The next step was the supersession of the direct-current generating plant by an alternating one from which, to use the vulgarism of the dynamo-tender, "the juice" could be squirted at great pressure, like water flowing under a high head, and then on reaching the outlying sections could be "stepped down" and "converted," by sub-station contrivances, so that the cars would still receive direct current at a fairly low pressure. This plan has proved enormously successful, and such practice dominates the trolley art to-day, for no sooner was it found expedient and available for urban service than it

was at once applied with even more success in rural regions. But for its feasibility, we should not see great States covered with a trolley network deriving its current from a few power plants advantageously situated, and many of them dependent upon hitherto neglected water powers.

The best example of such third-rail work and of the average conditions of the art in which the Zossen experiments find us is furnished without doubt by the interesting electric railway between Albany and Hudson, in New York State, a road nearly forty miles in length, with standard steam-line construction. It utilizes the water power of the Stuyvesant Falls, whence "alternating" current at 12,000 volts is delivered to three sub-stations. These lower the pressure and transform the current, and deliver it to the tracks at 600 volts "direct," for consumption by the motors. The passenger cars are motor cars also, the current being picked up by them from the third rail by sliding-shoe contacts, while in city limits the shoes are tucked away and the usual overhead trolley is used. The cars are 53 feet long, seat 60 passengers, are most luxurious to ride in, and the writer has made a timed speed of 51 miles an hour in them. Freight and farm produce are also hauled, so that the similitude to an ordinary steam road could hardly be more complete. Now, if we used the alternating current on the car instead of manipulating and "lowering" it in outside apparatus, and if we abandoned the third rail and went back to some form of overhead trolley contact, the Albany & Hudson would come pretty near typifying the work at Zossen. It is true that events move quickly in the electrical field, but there are reasons for believing that this American line, which runs through the pretty farming region where President Martin Van Buren, "the sly fox of Kinderhook," made his home, is likely to be the standard for such practice for some little time to come.

Prior to the now famous tests of Zossen were a corresponding series at Lichterfelde, the locomotive in use at the latter place being shown. Here again a fundamental note of difference is struck. It will have been noticed that hitherto the alternating high-pressure current has been kept off the car, but at Lichterfelde and Zossen the transformers for lowering and manipulating it are carried along, adding greatly to the weight, but enabling the three wires seen overhead to bring the three-phase current of 10,000 to 12,000 volts right to the immediate point of consumption. There could be only one further step of the kind, obviously, and that would be to drop the transformers out entirely and let the motors



THE HIGH-SPEED ELECTRIC LOCOMOTIVE.  
(Predecessor of the Zossen cars.)

receive the current exactly in the form in which it leaves the distant generator, say, fifty miles away. But this is not in contemplation at all, as all coming work points to tensions as high as 40,000 to 60,000 volts in transmission, now employed regularly in California, so that the transformers must be regarded as necessary parts of the system; and the only question about them among electrical engineers is whether they should be kept on board the train or left in sub-stations, the latter being now the standard practice.

Another very important point brought out by the Lichterfelde locomotive, the immediate predecessor of the Zossen car, is that it illustrates a tendency to extreme divergence in the methods of the future as distinguished from those of steam and of the past. The great vital issue is: Shall the high-speed train be hauled by one engine, or shall its propelling power be divided up and a certain proportion put under each car, thus eliminating the locomotive and making the car the self-contained unit of travel? There is more here than meets the eye. The trolley street and suburban car has captured commuter travel chiefly because it is going all the time, and is not made up in long trains moving at stated intervals widely apart, each train a cumbersome organization, with its own right of way, crew, scheduled starts and stops, and other elements contributing to check speed and lessen flexibility of system. At the same time, the later refinements of trolley work enable electrical engineers to build up trolley trains according to the traffic each minute of the day, so that two cars are a unit at 4 P.M., four cars a unit at 5 P.M., and six cars a unit at the rush hour of 6 P.M. As the travel increases or declines, a car can be added to another or detached, each set always working under closest control and at highest economy of current, labor, and time; but it is evident that the steam locomotive built to haul ten cars is seriously disadvantaged if cut down to three cars in slack hours, or if another lighter locomotive has to be kept in addition, to take its place for the lesser load of business. This conflict of conditions, making for the steady evolution of new practice from the single trolley car, as opposed to the old locomotive method of one engine hauling a long line of coaches, is very much in evidence at the present time; but it is already conceded that the "multiple-unit" system, to which the distinguished inventor, Mr. Frank J. Sprague, has given so much of his thought and influence, is to-day one dominating factor in electric railway work. Indeed, Mr. O. Lasche, the chief engineer of the Allgemeine Elektrizitäts-Gesellschaft, which has done part of this Zossen work, says, very pithily: "A rapid succession of separate motor cars is



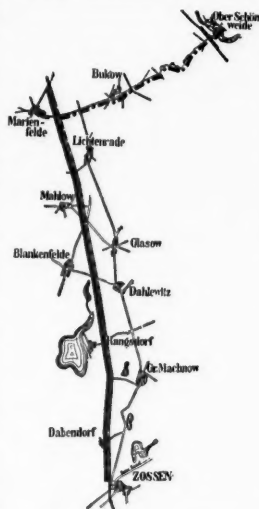
A GERMAN HIGH-SPEED CAR.

(This Zossen type can make 140 miles an hour.)

one of the most obvious advantages of the electric system of railways, and this method of working is proposed both for suburban and for long-distance lines. For this reason, therefore, the trial cars of the association carrying on these tests have been built as passenger cars, and not as locomotives. This 'quick-service' system is already needed for the convenience of the public, and will be gladly paid for by them." It may be noted incidentally that these "multiple-unit" methods prevail now on the elevated roads in Chicago and Boston, and will be those employed in New York by the Manhattan Elevated Company, as well as by the Rapid Transit Underground. In London, where electric locomotives were adopted for the "twopenny-tube" work, experience has already indicated the preferability of the separate car and multiple-unit practice, which, it is now understood, will hereafter prevail there. Thus is curiously exemplified again the failure in the domain of electric traction of the single locomotive hauler unavoidable with steam, and, on the other hand, the success, even in main-line trunk-route traffic, of the street-railway practice that was popularly supposed, prior to the introduction of electricity, to be its very antithesis. Shall we, indeed, be taking presently transportation from New York to Philadelphia with a car "unit" that starts out every five minutes, or have the opportunity to leave

London for Glasgow every ten minutes? If this be so, the readjustments to local traffic and way-station stoppages will require some interesting modifications.

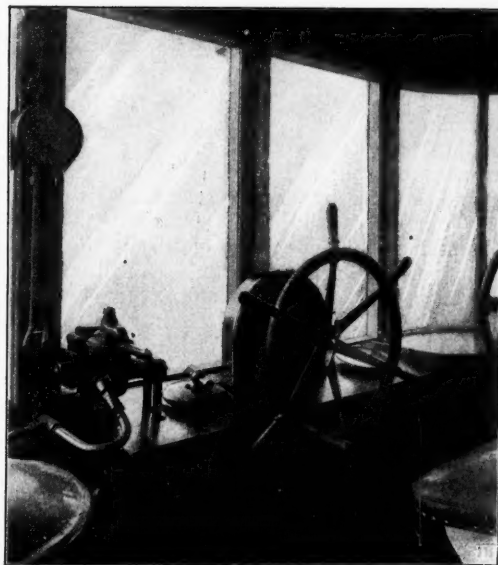
In the Zossen car here illustrated, the problem set to the Siemens & Halske Company and the Allgemeine Elektrizitäts Gesellschaft was to construct a motor car for a speed of 125 miles an hour, to accommodate 50 passengers, with necessarily improved apparatus for starting and regulating the motors, etc., and for braking. The car shown has two bogie trucks with three axles each, and the four polyphase motors on it are designed for a total normal output of over 1,000 horse-power, with 3,000 horse-power maximum. Electric current of the three-phase alternating type is furnished to the overhead line at a pressure or tension of 12,000 volts, and at a "frequency" of 50 cycles per second. This current has been supplied from the Oberspree central power house of the Berlin Electricity Works, which is about nine and one-half miles from the feeding-in point. The transformers mounted on the car reduce the high-line voltage to that of 435 volts for the motors, each motor giving a normal output of 250 horse-power and a maximum of 750 for acceleration, etc. When the motor is running at about 960 revolutions per minute of its rotary part, which is mounted directly on each car-axle, the car can develop a speed of not less than 140 miles an hour. The total weight of the car and all its appliances, taken prior to its first test, was exactly 196,000 pounds. The Berlin-Zossen line is 14½ miles long, with grades up to 3 per cent. and radii of curvature as short as 1,000 meters, and over this, with gradual tunings up, the car has been put at 100 miles an hour. The current is furnished from the three overhead wires through the curious collectors of wire bow shape. Each car has usually two of these collector standards, 58 feet apart, so that the car is virtually always in contact with its source of supply. This is a vital matter, of course. Germans have always favored bow contacts, while in America



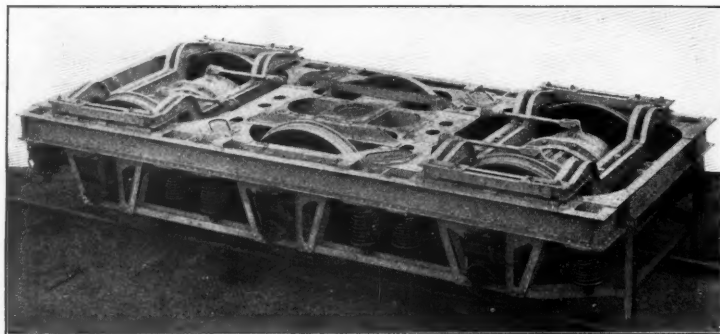
THE ROUTE OF THE HIGH-SPEED SERVICE FROM ZOSSEN.

the trolley wheel has reigned supreme. Sometimes the overhead contact travels in an inverted trough, the big electric locomotive of the Baltimore & Ohio in the Baltimore tunnel being an example of this, while the same principle may be seen well illustrated at the New York end of the Brooklyn Bridge trolley-car service. The great thing is to maintain contact, and the bow certainly does this, although it is a fair inference that the wire is worn away rather rapidly. Another older German practice has been to have a plunger contact or slider traveling along inside a split tube. The amazing thing is that these bows, flying at terrific speeds, can collect and deliver such large quantities of current through points of contact that at best are very insignificant in dimensions. It will be noted that they are carefully safeguarded. So, too, on the car itself; the passenger sits in what would answer nicely for an armored compartment, with double sheet-metal walls and air spaces all around him. The car is slightly curved at the ends, but the experiments go to prove that the boat-shaped noses are of no particular benefit. Apparently, the main obstacle now to making the full 140 miles an hour is the condition of the roadbed, which is being improved forthwith.

The Zossen work is still in progress, and much interesting data is accumulating from it. That the tests should be made on a Prussian military road is suggestive, although, as South Africa demonstrates, slow highway tractors are not less a campaign desideratum than locomotives that



IN THE MOTORMAN'S CAB OF A ZOSSEN CAR.



THE TRUCK OF THE GERMAN CAR.  
(Speed of over 125 miles an hour.)

can move troops swiftly. Meantime, the most casual reading of the daily prints testifies to the probable coming in of electricity on standard steam roads. Recently, in England, Mr. Langdon, electrical engineer of the big Midland Railway, intimated that the passing of the steam locomotive was a moral certainty—a pretty plain remark from such a quarter. Mr. Jackson, chairman of the Great Northern, followed that up by stating that as regards passenger traffic on suburban and branch lines, that was “going electrically” without a doubt. The leading railway in the south of England has just retained electrical experts to advise it as to changing over to electricity; and while this article is being written a cablegram from London announces that the London & Northwestern Railway has under consideration plans for electrifying its whole great system. If this were not enough, Americans need only turn their eyes upon what is going on at home, with the New York Central retaining authoritative electrical experts on the subject, the Pennsylvania and Long Island railroads proposing to make Manhattan Island a grand terminal by means of electric traction, and far out West the Great Northern seriously discussing the adoption of electricity for important portions of its route. It matters little whether this work is done now or ten years hence. The fact remains that future transportation is looking to electricity for greater economy, increased comfort, more frequent service, and higher speed.

It is an odd fact that may fittingly be mentioned here in closing that some steam railroads have complained of the harm done to their best class of passenger traffic by the long-distance telephone, while hotels in Western cities have also attributed a reduction of patronage to the same cause. Travel between St. Louis and Chicago, for example, is said to have been apprecia-

bly cut down by the telephone. Such a result would seem difficult to trace tangibly, although one meets people daily who, to avoid weary trips, have governed themselves on the injunction: “Don’t travel,—telephone.” But the telegraph and the mail have also been deterrents, and if there is any validity to the alleged reason, the high-speed electric travel of the future may restore the former conditions. It is, indeed, hard to conceive that with travel

methods thus perfected the roads would not enjoy to the utmost degree the patronage of a public which, after all, likes to be in motion, and loves dearly to taste and see everything, everywhere, with its own physical senses.

This brief review of a subject far too large to compress very definitely or accurately in a few pages will perhaps suffice to show that in the electrical age of transportation, the various systems of through lines, elevated tracks, street surface cars, and subway roads will be far more closely related than was possible with steam, the elements of common needs and common practice binding them intimately together. To-day, it is true that some steam railroads own street-car lines, but only under electricity can these variant services be operated from one source of supply over the same rails. How far this may lead economically and financially no one knows or guesses, but if the New York Central were some day to be the backbone of a system embracing in its ultimate analysis all the contributory street-car networks of the State, it would not go beyond the purview of some of the plans one hears discussed. Hence, while the Zossen trials may not appear to bear very directly on the plans of the Manhattan Elevated, now “hitching its wagon to the star” of electricity, or on the intention of the Pennsylvania Railroad to reach the heart of New York City through tunnels by means of electric traction, there is an underlying harmony of intent and effort never before attained in such work, and which compels to unity of scheme and apparatus despite personal and political opposition, however intense. It does seem that nothing can long stay the rising electric tide, and that in the fanciful adumbrations of the enthusiasts for electricity lies more truth than is revealed by present actualities. The hard, grind test is better service to the public and lower expense to the road.



## A TENEMENT SETTLEMENT.

BY EMMA WINNER ROGERS.

STANDING on the bridge which spans the Erie Canal at Erie and Canal streets, in the city of Buffalo, one may look southeastward to a second bridge less than half a mile distant; while between the two, and bordering the famous canal, tall tenements loom up with warehouses in the distance and rear ends of shops and stables. An embankment, not green, slopes from these buildings to the water's edge. The slow-moving boats, in groups or singly, with the family washing strung out above the diminutive cabins, lend a homely picturesqueness to the scene. On the right, Canal Street runs parallel with the canal. On the left is the business center and heart of the beautiful city of Buffalo,—St. Paul's Cathedral, the public library, the Iroquois Hotel, many large business blocks, the Niagara railroad station, and all the moving panorama of a great commercial center.

It is no new story to find squalor, lawlessness, disease, and crime intrenched within a stone's-throw of market place and cathedral; but if the imagination has been stirred by a week of days in the "Rainbow City" at the north end of Buffalo, the outlook from the canal bridge takes on a new significance. The insistent question rises whether a city will ever seize the occasion of a great exposition to make itself over like the ideal cities which time and again have risen to mark great events; will erect or transform vast buildings to serve the temporary use and to be a permanent possession after; will color and adorn, from an artist's scheme, the quaint and varied buildings which have marked its growth from village to city; will create a "midway," or street of nations, of its own foreign quarter with its picturesque life and trade. No effort and no cost has been too great in creating these temporary cities with their fleeting beauty and use for the instruction and inspiration of the people; but

the building over of a city's slums and its business district, which usually lie close together, into a White City, a source of permanent pleasure and inspiration, has not yet become the method of worthily celebrating historic events. The imperative need for it struck the writer forcibly while standing on the canal bridge at Buffalo in the shadow of the great tenement where an altruistic woman citizen and her associates are trying to make one of the city's ugly and evil sections to blossom into order and beauty.

Here, bordering the canal, a grimy five-story red-brick corner tenement stands. "The Remington" is inscribed over the main entrance. The story of how Miss Remington and her little band of workers have transformed a foul and overcrowded tenement into a clean and orderly one, making it also the center of a large settlement work, has its lesson and its vital interest.

The settlement was established by Miss Mary E. Remington in May, 1898. She had been for three years at the head of a settlement under the auspices of the First Presbyterian Church of



THE REMINGTON.



WAITING FOR THE DOORS TO OPEN.

Buffalo, and before that had for six years conducted the work of Welcome Hall, a mission and settlement in New Haven, Conn. Her wisdom and success in these undertakings led a philanthropic woman of Buffalo, when Miss Remington resigned her position in the Buffalo settlement, to offer her a salary of \$600 a year to work wherever in Buffalo she felt her work would be most effective. She accepted the generous offer, seeing her way clear, with this small income, not only to "live," but to carry on a small settlement work.

With her friend Miss Hyde, a stenographer, who had lived with her ten years and given her leisure to good works, she took up her residence in rooms over the Grand Trunk freight station on Erie Street, at the head of Canal Street, the use of the rooms with the furniture being donated.

A kindergarten, classes and clubs, a Sunday-school, and friendly visiting were begun, and grew into such proportions that the rooms were entirely inadequate. A residence in this squalid, neglected, and evil quarter so impressed its needs upon Miss Remington that she

decided to remain permanently.

Directly across the street from the settlement rooms stood one of the worst tenements in the city. She often visited in this house, and the frightful conditions in which the tenants lived inspired the idea of getting control of the house, renovating it into a decent, comfortable tenement, and moving the settlement into the spacious main-floor rooms, then occupied by dance halls and saloons. The house was on leased ground, the lease having seventeen years to run, and could be bought for \$10,000; \$700 had to be spent at once on repairs, and to make the building habitable for the settlement and adapt rooms

for its work. Miss Remington bought the house and paid down \$200, all the money she had, and agreed to pay \$500 every six months until the building was paid for, with 6 per cent. interest on unpaid balances and \$520 annual ground rent. The carpenters, painters, plumbers, and paperhangers were set to work at once, and willingly agreed to wait for their pay.

The building had formerly been a large hotel—



THE STAR CLUB.

the Revere House. It was crowded full of Italians when the new owner took possession, housing more than a thousand people. Nineteen people were living in the two or three cellar-basement rooms. Upstairs, the large rooms had been divided by board partitions, and two, three, or

in their lot for a time with the settlement, cooperating in its work. The number of people in the building was reduced to about seven hundred, the basement dwellers were moved upstairs and their former dark quarters rearranged for woodsheds for the use of the tenants. The tenants

were not interfered with or lectured, but the contagion of cleanliness and order did its work quickly. The women were eager to help keep the halls and stairways clean. They took pains to carry the garbage down without dropping remnants of it on stairs and hallways, as formerly. They gladly agreed to tear off the old wall paper of many thicknesses from their rooms and clean them up thoroughly when a small gift made it possible for Miss Remington to repaper the house. In due time the awful odors and unspeakable filth of the common halls and stairs and closets were all



KITCHEN GARDEN.

four families occupied each a corner of these rooms, their ranges, beds, tubs, and entire household paraphernalia making an unclean and noisy pandemonium of these travesties of homes. The floors were sunken in many rooms, as the tenants would drag wet wood fished from the canal up the stairs into their rooms and chop it right there on the floor. The halls were dark and filthy, and a first step was to put in electric lights. Nineteen dollars was spent on panes of glass to take the place of the rags stuffed into the broken panes. The ground floor was rearranged into an office, residents' dining and living rooms, club rooms, and small and large halls for settlement work. In October, 1898, a transfer of the settlement was made to the Revere block, newly christened the Remington. The residents numbered four—Miss Remington and three assistants. Later a trained nurse was added to their number, and a dressmaker and a young married couple each rented an apartment and cast

changed; rooms were kept scrubbed, windows were cleaned, and rags disappeared from them with the coming of the new panes of glass. After this renewal each tenant was required to pay fifteen cents for each light broken, the cost of the glass, and the owner agreed to pay the cost



MOTHERS' MEETING.

of setting the pane. This clever coöperation put an end to broken window-panes. Flower-boxes began to bloom on the window-ledges, and to-day it is easily possible to note the line of the next adjoining tenement because of its dirty and rag-stuffed windows fronting on the canal.

Miss Remington declares she would not ask for better tenants than these Italians. She is their friend in any case of trouble or need, and she visits them weekly to collect the rents. In the three years since she took possession of the building she has not lost one dollar of rent. The tenants are very poor, but they save their rent money even if it necessitates short rations of bread and macaroni, and take pride in paying it when due. Many of them work in the neighboring country during the summer, both men and women, and save nearly enough to tide them over the winter.

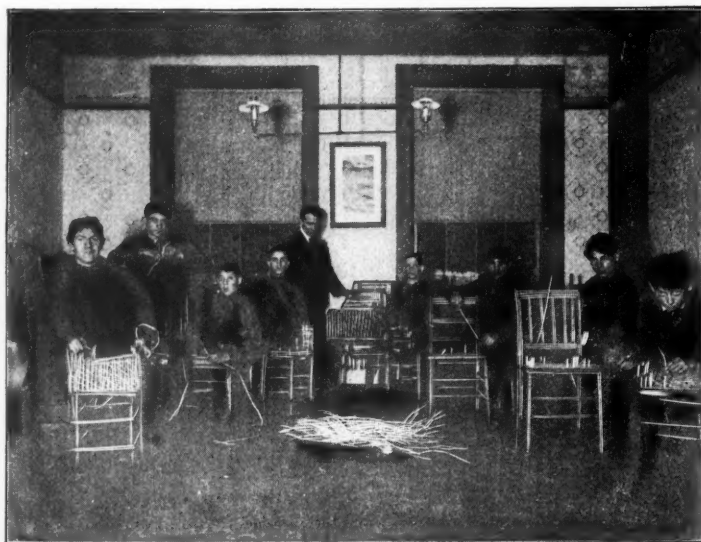
To assume so large a financial burden with no money of her own and no one to back her financially, in addition to taking up the direction and development of a large settlement work, seems



SHORTHAND CLASS.

an absurd venture, but is only another instance of that faith by which alone great things are brought to pass. The results prove the wisdom of Miss Remington's undertaking. Her purpose was to provide a suitable home for the settlement, and at the same time remedy the frightful evils of an insanitary and overcrowded tenement upon a thousand innocent lives. From the rentals she expected to meet the costs of the building, pay gradually the purchase price, and in a few years have an income from the building to pay in large part the expenses of the settlement. After three years of ownership the great tenement has been renovated and transformed into sanitary homes for seven hundred people. It also furnishes spacious rooms and halls for the work of the settlement, and apartments for the residents.

There are fifty-six apartments in the tenement, renting at from \$2.50 to \$8 per month. The tenants usually sublet a corner in their apartment, thus bringing the number of families up to about one hundred. The income from the tenants averages



CHAIR-CANING CLASS.



\$150 per month, which, with the rental of a ground-floor shop, and for occasional use of the halls, brings the income of the building to about \$2,100.

Miss Remington has each year met from the rentals almost the entire expenses of the building, which have been approximately as follows:

Annual payment on purchase price.....	\$1,000.00
Annual interest on unpaid balances.....	522.00
Annual land rent.....	520.00
Annual repairs.....	300.00
Annual taxes and insurance.....	200.00
	<hr/>
	\$2,542.00

The ground floor, now occupied by the settlement, was formerly leased for saloons and dance halls, bringing an annual income of \$1,320. This amount is the part which the tenement investment contributes at present to the maintenance of the settlement. The residents pay their own living expenses and are unsalaried, except one or two trained workers. Many non-resident helpers aid in the work, and others contribute money and needed equipment. Miss Remington has never asked for money, and feels that she cannot do this. The appalling needs, social, material, and spiritual, of the very poor in the worst sections of large cities do not result in Buffalo more than elsewhere in countless tenders of gentle human service or ample gifts of money. Every economy has been practised by the settlement, and in this way alone is the present success possible. Miss Remington's energy and resourcefulness is shown in the method she adopted this summer to swell the fund toward reducing the debt, and to put a new roof on the big building. After the season of clubs and classes was past she equipped the settlement as a dormitory and boarding-house for Pan-American guests. At midsummer she had cleared \$500 above all expenses, and hoped to double this amount before the season closed. The Buffalo settlement is unique in the double social work it is doing for better housing of the people in connection with its successful work in the usual settlement activities and influences, and for the practical example it offers of a method of partial or complete self-support.

No subject causes more perplexed questioning in the settlement movement and none more strenuous effort than this of financing the work. Thus far it has very generally depended on volunteer annual subscriptions to meet the large cost of buildings, equipment, and service. The increasing number of organizations depending upon this method of support makes it difficult and often disagreeable to the solicitor and bur-

densome to contributors. Moreover, a settlement is placed too much upon the basis of a charity by this method of maintenance. Its claim of brotherhood and simple neighborly helpfulness is compromised by the necessity of begging money to shelter and equip its work. Its growing value as a social and civic center will naturally draw to it as members and allies, as pseudo-residents of the neighborhood, indeed, people with social consciences awakened, who will render it aid in money and personal service. With such legitimate help, can the residents and its "neighbors" maintain the settlement? This would be the ideal method, and Miss Remington in her Buffalo experiment has gone a long ways toward proving its possibility.

The activities at the Remington Settlement are similar to those in other settlements. For the children there is a day nursery, with an average attendance of thirty children. The report, in describing this pleasant home for the little ones, says:

But the chief novelty of the place is the bath-tub. At first we had some trouble in coaxing the little ones to take part in this peculiar diversion; but after it was found that no one was drowned in that unnecessary amount of water, and that the skin did not peel off, even very timid ones were willing to undergo the scrubbing. One little tot, while splashing around, demanded, "Teacher, can't I bring grandma to have a bath? She hasn't been washed all over since she left Italy."

A kindergarten in the immediate neighborhood coöperates with the settlement. There are kitchen-garden classes numbering over eighty attendants. Five large rooms are open every evening for the boys' clubs, which have three hundred regular attendants. The boys are divided into small groups for manual training and various handicrafts. They also have games, stories, and gymnastics to vary their evenings, and frequent entertainments. "Are we going to eat to-night?" is an oft-repeated question with the boys. They have done good work in chair-caning and shoe-repairing. The latter work is taught by a first-class shoemaker, and they mend their own shoes and bring others from home to repair, and mend for children who attend other classes. The manual-training classes for girls enroll as many as there are tools for them to work with, and the sewing classes are large. Classes in music and shorthand are maintained for boys and girls. The older girls are organized as the Friendly Workers, and the women into mothers' clubs and sewing circles. A circulating library, a penny savings-bank, and a system of friendly visiting are among the helpful activities.

The religious work of the settlement is a Sunday-school with three hundred attendants, and

Gospel services on Sunday and Thursday evenings, at which the attendance is very large. The religious work seems not to affect in the least unfavorably the usefulness and extent of the settlement's work, although most of the community are Catholics, Jews, or non-religious persons.

Many nationalities are represented in the population of the neighborhood, chief among them being Italian, Irish, French, German, and Polish. Canal Street in this region is notoriously a street of low saloons, dance houses, and houses of prostitution. They are scattered thick among the poorest working people, and do their deadly evil to the bodies and souls of the most defenseless citizens. For the unfortunate girls of this street Miss Remington and her associates have been able to do a little. The trained nurse at the settlement made three hundred and fifty calls on these girls in cases of sickness. She invited them to her room each Wednesday evening during the winter. Games were played, refreshments served, and reading and instruction contributed to many pleasant evenings; above all, friendship and sympathy were extended. Twenty-three girls attended. The residents have been

able to send forty girls to their homes or to temporary homes away from old associations. This work has been purely incidental, and in the way of neighborly kindness, as neither the time nor equipment of the settlement permits of a regular work among this unfortunate class.

One is very deeply impressed, in a visit to this Buffalo settlement, with its immense value in transforming homes and as a center of social life, useful instruction, and neighborly kindness in the squalid region where it is situated. Its work is more than impressive—it is inspiring—and its results and possibilities cause humane and sympathetic people to want to go and do likewise. The growth and rapid increase of settlements make it important to consider how they may do the most for the community and how best keep true to their highest ideals. The Buffalo settlement is suggestive of the value of close contact with the neediest, of a sure method of improving the homes of the people and influencing them in numberless ways as citizens and home-makers; and last, but not least, it sets forth a practical way in which certain settlements may become in whole or in part self-supporting.

## CHARLESTON AND HER "WEST INDIAN EXPOSITION."

THE "South Carolina and Interstate and West Indian Exposition," which opened on December 1, at Charleston, is really the first typically Southern fair, for Atlanta is far north of South Carolina in everything except latitude. The people of South Carolina, and more especially of Charleston, have in this enterprise two general objects in view besides the specific purpose of stimulating the trade and progress of their own city,—to exhibit before the world the achievements of Southern industry and art, and to demonstrate the great and important future of trade with the West Indies and Spanish America.

Charleston has a special interest in this coming trade with the West Indies, for it is the most considerable and advantageous port on the South Atlantic seaboard. The engineering work done by General Gillmore and his successors has given a magnificent channel of thirty feet depth, which is gradually being still further increased by the action of the jetties. Charleston is the most accessible city on the Atlantic seaboard to the Mississippi Valley, taking St. Louis as the center. The excellent harbor and important strategic

location of the city have induced the national government to establish one of its largest naval stations there. Charleston is now the port of shipment for the Sea Island cotton, the finest variety in the world; and South Carolina takes first place, too, in the quality of the rice produced on the marshes and lowlands of the eastern coast.

Thus, although Charleston is a city of but fifty-five thousand inhabitants, more than half of whom are negroes, it is natural that her enterprising citizens should call forcible attention by this exposition to the inviting future of commerce with Cuba and Porto Rico. Senator Depew summed up the opportunity in his oration the inauguration of the exposition:

Mystery and distance have so fired our imagination and filled our minds, that we have neglected the opportunities at our doors. Our trade with the West India islands has received little encouragement. It has been the theme of neither the writer, the orator, nor the statesman, and Congress has been too busy with telescopic visions to use its unaided eyes. In 1900, our exports to the West Indies were greater than to all the republics of South and Central America together, greater than to all the far East, and greater than to all the countries of

Continental Europe combined, leaving out Germany and France. And yet, while Canada buys 60 per cent. of all her imports from the United States, the West Indies only purchase 20, and South America 10, per cent.

Although it was as late as January, 1901, that the General Assembly of South Carolina appropriated fifty thousand dollars for the State exhibit, the entire exposition was in a much more complete condition on opening day than is the rule with such institutions. In general, the South Carolinians, under the energetic leadership of Capt. F. W. Wagner, president of the exposition company, have shown the most notable enterprise, ingenuity, and good taste in availing themselves of their natural advantages for making an attractive and imposing exposition with the comparatively small amount of money at their disposal. The one fact of the proximity of the world-famous Carolina pine has almost cut the cost of building in half, as compared with the cost of corresponding construc-

tion in a Northern city of such large edifices. The site of the exposition is a tract of one hundred and sixty acres, situated, as regards the city of Charleston, just about as if it lay along upper Riverside Drive, were Manhattan Island substituted for the neck on which Charleston is

built. The Ashley River corresponds to the Hudson, Cooper River to the East River, and the fashionable residence portion of Charleston to Battery Park. The exposition grounds are extremely fortunate in every way; only two and one-half miles from the business section of the city, they can be reached easily by private conveyance, electric or steam cars, and their frontage on the water enables ocean-going vessels to unload right on the exposition premises.

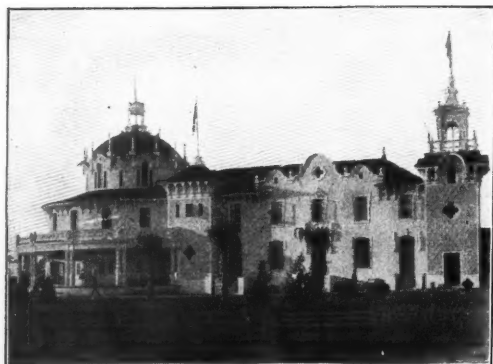
But even more important than the material advantages of the location is the natural attractiveness of the ground. A beautiful park was already awaiting the exposition-makers on the famous old Lowndes estate, now owned



VIEW OF THE COTTON PALACE AND GROUNDS.  
(The Chief Building of the South Carolina and West Indian Exposition.)



THE FAMOUS LOWNDES MANSION.  
(The Woman's Building of the Exposition.)



THE ADMINISTRATION BUILDING.

by Captain Wagener. This aristocratic and historic estate, dating from away before the Revolution, is charmingly typical of Charleston, Carolina, and the South, with its shady drives, inviting walks, and groves of truly magnificent live-oaks. Captain Wagener has generously presented this interesting estate to the exposition, and the fine old colonial Lowndes mansion is itself one of the exposition houses,—the Woman's Building.

With such a fascinating retreat from the weariness of overmuch sightseeing, with such easy distances, with the perfect climate of Charleston from December to May, that frequently allows out-of-door roses to grace the Christmas dinner-table, the exposition visitor should find a happily distinctive feature in sightseeing,—something of the grace and ease of life at hand, which to a Southern fair, and especially to a Charleston fair, should be peculiarly appropriate.

The many Northern visitors who will undoubtedly stop over from their winter migration will, indeed, find Charleston itself worth a visit, with its rich historic associations, its traditions of social distinction and the best Southern culture, its quaint and picturesque buildings and street scenes, no less than the exposition proper. At the beginning of the last century, Charleston was the fourth city of the Union, in point of population, and second to none in the elegance of its society and the refinements of life. Indeed, Josiah Quincy, hailing from Boston itself, placed Charleston easily first in the American civilization of a century ago.

The exposition has fourteen principal buildings, and all are now completed. Those on the northern section of the grounds, and the Lowndes estate, with its rolling land and graceful live-oak trees, are less formal in architecture; Mr. Bradford L. Gilbert, in charge of the designing, has had the good taste to refrain from aggressive efforts in the structures built on this naturally beautiful piece of ground. Thus, the Machinery and Transportation Building, and the Negro Building, are long and low in outline, constructed in the general type of the Mexican missions. In the southern half of the exposition grounds, the more elaborate essays in architecture have been made around the four sides of a wide plaza. The central figure is, appropriately, the Cotton Palace, 360 feet long, 160 feet high, and covering 50,000 square feet. These figures will show that the enterprise is on no small scale. The architecture of the main buildings is throughout more or less true Spanish renaissance. The color is ivory, with the roofs simulating the red-tile characteristic of this Spanish-American type. The material of the buildings is Carolina pine, with iron strengthening, the whole covered with the usual "staff" composition.

As one looks down the plaza, the Liberal Arts Building is on the right of the Cotton Palace, and to the left, the Agricultural Building. At the northern end of the Plaza is the Auditorium, with a seating capacity of 4,000, and at the entrance are the Administration Building and Minerals and Forestry edifice.

The great Plaza itself is 1,200 feet long and 900 feet wide, while the general effect of spaciousness and the impressiveness of the building masses on the sides have been increased by the construction of a sunken garden below sloping

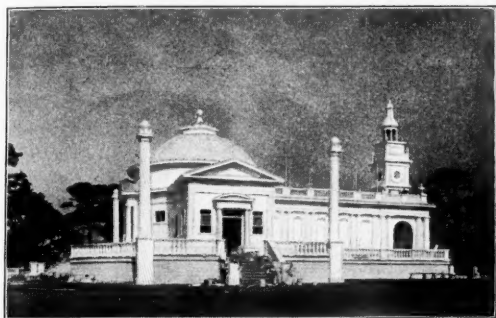


THE AUDITORIUM.



green terraces in the center of the space. This pleasant court, lined with majestic palmettos, will, over and above its æsthetic use, add greatly to the comfort of seeing the exhibits in the buildings about it.

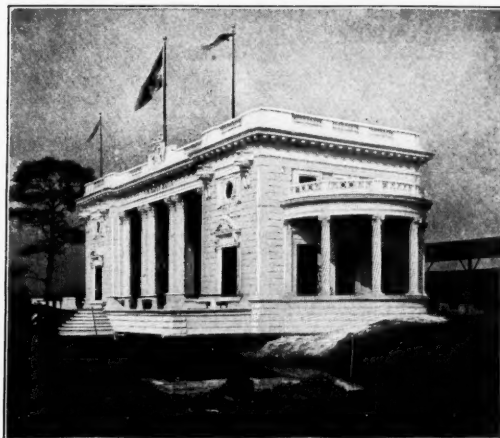
There is a Midway, of course, and a race track and a live-stock exhibit. Of the special American



THE PENNSYLVANIA BUILDING.

exhibits, Maryland and Pennsylvania are well in the lead; New York appropriated only \$15,000 for the entire enterprise, so that her building, an inviting Spanish "casa," built around a small court, is naturally not imposing in size.

The management of the art exhibition has, it is said, made especially good use of native opportunities in procuring canvases of famous early American painters that have never before been shown to the public. From the aristocratic homes of South Carolina, some examples of Gilbert Stuart, Copley, Sully, and the Peales have been loaned by public-spirited citizens who would not have allowed these heirlooms to leave their



THE MARYLAND BUILDING.

homes for any other consideration than the glorification of the South Carolina Exposition. Visiting amateurs will find a treat in these rare pictures.

The attendance has promised to be very good; there were 20,000 people present on opening day—more, indeed, than saw the formal exercises of the Buffalo fair; moreover, the set of winter tourist travel to the South and Southeast is only now beginning. Charleston is easily reached from the North and West, with an excellent passenger steamship line direct from New York, and three great railroad systems vying with each other to offer the fastest and most luxurious trains to the wealthy pleasure and health seekers that flock to South Carolina, Georgia, and Florida in the winter and early spring.



THE MINES AND FORESTRY BUILDING.

# THE EDUCATIONAL VALUE OF PLAY.

BY DR. JOHN E. BRADLEY.

THE late President Barnard, of Columbia University, in answering the question, "How was I educated?" begins by raising the counter-question, "Was I, in fact, ever educated at all?" Not that he had not had teachers enough, but that their relations to him had been such that he doubted whether they had really educated him. While he honored and loved many of them, he attributed most of his "education," such as it was, to certain incidental molding influences and to "contact with the other fellows." Text-books and schoolroom drill are only one factor in education.

In a paper read before the National Superintendents' Association, at its last annual meeting, Dean Briggs, of Harvard University, said that "while the football player gets a little culture from his studies, he gets his education from his football," and that "the whole drift of the present time is to turn work into play and play into work." His position was promptly challenged, and in the discussion which ensued the perils of football, mechanical drill, and mental discipline were all vividly portrayed.

Without stopping to inquire exactly what is meant by "mental discipline," or whether Dean Briggs' critics differ from him as radically as they suppose, let us note some of the changes which the present "drift" has produced, and then consider the service of play in education. We have been rather strenuously engaged for twenty years or more in introducing the "new education," as it is inaccurately called. What has it brought us?

Much unprofitable discussion, no doubt; sometimes a search for a short-cut or a royal road, and sometimes a Quixotic battle with the whole existing order of things, but, on the whole, a clearer purpose and a wiser plan in most of our educational work.

It has given us the kindergarten, that beautiful vestibule to education, in which the child's love of play and his active impulses are gently directed and utilized. It has carried the spirit of the kindergarten and some of its methods into the primary grades, making the schoolroom attractive and relieving school life of its old-time severity. It has simplified and extended the work of the middle grades, yielding opportunities and results which were unknown a few years ago. It has multiplied high schools, raised their grade, and greatly increased the number of

their pupils; added normal schools and technical schools to our educational system, and disseminated the idea that men and women must be specifically trained and equipped for their future calling. It has developed the elective system in higher education, bringing hundreds of modern topics within reach of the student. It has sought out and applied the "natural method" in elementary education and developed it into the "scientific method" of the college and the university, encouraging the student to undertake investigations, gather facts, and reach conclusions which shall be, in a way, first-hand. All this it has already accomplished; where conditions have been favorable, it has done much more, while there are few places into which more or less of these vitalizing movements have not penetrated.

Why has a "drift" which has brought such valuable results tended to turn work into play and play into work? Because we have been trying to learn the lessons which nature teaches and to apply them in our work. In the growth of the child, nothing is more remarkable than his ceaseless activity. Every waking moment is filled with action. His frequent mishaps and bruises cause little concern, but a premature sedateness is a matter of serious import. Should his noisy restlessness cease even for a short time, his mother is filled with apprehension for his safety or his health. As he increases in strength and intelligence, his inclination to play becomes more marked. Activity which before seemed aimless is now vigorously directed to a definite purpose. His impulse to play constantly asserts itself. If toys and companions and cheerful surroundings are lacking, the play instinct may be modified, but will not be suppressed. Indeed, that would be an unnatural child whose laughter and crying did not spring in rapid alternation, and whose fickleness was not at once his mother's daily amusement and despair.

The purpose of nature in this insatiable love of play is obvious. It is to develop her children and prepare them for their life-work. The law of growth is use. Play is nature's mode of securing practice in necessary acts. No sense-organ, no muscle or nerve, can be fully developed and made available for effective service without long-continued exercise. This is true of animals no less than of man. The kitten in its play seems to be bent only upon amusement, as when she

pounces upon the straying ball or leaf, but she is really training herself to spring with unerring swiftness upon her future prey. Seton-Thompson has shown us, in his stories of the woods and the plain, that many wild animals would starve were they not trained in their native haunts, while still very young, for the predatory life which they are to lead. Their early education takes the form of play and is their daily delight. Their distinctive traits are carefully cultivated, and their progress is rapid. The keen senses, the cunning stratagem, the noiseless pursuit, and the fierce encounter are all foretold in their play. The animal which can play best becomes the one which can hunt best and most surely escape when pursued. In the selection of nature, he will survive long after his less playful mates have perished.

Play indicates the growth of powers and capacities which require exercise for their complete unfolding. The muscles become firmer, the bones tougher, the lungs larger, and the heart stronger because of the love of play. Every function is improved, and the whole body is built up and strengthened.

No less valuable is the mental stimulus of play. The child is trained by it to quick perception, rapid judgment, prompt decision. His imagination cunningly suggests a thousand things to be done, and then trains the will and every power of body and mind in the effort to do them. The sports of childhood are admirably adapted to quicken the senses and sharpen the wits. A simple little game, like tag or hide-and-seek, calls many faculties into exercise and keeps them alert. Ready control is obtained both of body and of mind. Nature has effective ways in her school of securing the exercise which is needed to develop every mental and every bodily power. She fills the activity brim-full of enjoyment, and then gives her children freedom, assured that they will be their own best teachers.

Prof. A. H. Yoder has made a minute study of the boyhood of fifty eminent men of modern times—most of them men of the nineteenth century. It is related that every one of them was fond of play, active in it, in his boyhood. Many of them were leaders in outdoor sports. Not one of them carries out the idea, formerly so prevalent, that great men were sickly or physically inactive in youth.

Many have preferred some system of gymnastic drill to play. These drills have the advantage of securing for every member of a class a certain amount of physical exercise, and they do not require large playgrounds or athletic fields; but they lack the spontaneity and mental stimulus of play. Professor Mahaffy says that

"the schoolboy who is trained in cricket, football, and rowing enjoys a physical training which no gymnastics, no classical training of Greece or Rome, ever equaled." It is not so much form as freedom of action which is needed. Dr. Weise, commissioned by the German Government to study the organization of the English public schools, commended this freedom and the exhilaration of the English games in contrast with the German gymnastics. He said in his report that the young men of Eton and Rugby did not play in order to develop their muscles, expand their lungs, quicken their circulation, improve their figures, or add grace to their bearing. They thought of none of these things. They simply played from the love of playing, and all these and many other benefits were the result.

It has been said that it is work which transforms a boy into a man, but it is also to be said that the boy of promise plays. His love of fun is his choicest gift, for he thus secures the health and vitality which are to be his working capital. Play lays the foundation of strength—strength of body, strength of mind—and then it trains the directive power which is to use it. While it springs from an instinct, an irresistible impulse, it contributes to the highest rational ends. It quickens the perceptive processes, brightens the imagination, trains the judgment. What can be more charming than the youthful flashes of wit and wisdom which it elicits? The habits of thought induced in childhood by the happy hours of play are some of the most precious things in education. Few traits can be more desirable than mental vivacity and responsiveness, than ready appreciation and a disposition to be easily pleased, than joy in wholesome companionship, than an instinctive condemnation of whatever is untrue or unfair. Nature intends that this early impulse shall so stimulate the sensibilities and lighter emotions as to infuse gladness and sparkle into the activities of the mind as long as one lives. "It is a crime against a child," says Dickens, "to rob it of its childhood." His books contributed largely to the emancipation of childhood from cruel hardship, and the schools have been quite transformed since he wrote; but there is still too much repression in education. If the child is denied his rightful sports, if premature quiet and sedateness are enforced, he will lose the buoyancy and cheerfulness which should be his intellectual and moral tonic all his days.

Much ingenuity has been shown in the invention of schoolroom games. Some of them possess all the interest of outdoor play. They may be the best that can be done in many of the old city schools; but, in future, let us locate our schools where reasonable playgrounds can be pro-

vided, and let us give plenty of time for recess. "Man made the school; God made the playground," says Walter Bagehot. Why should we mar the divine plan in our efforts to educate the child?

Nowhere is the beneficent service of play more apparent than in the training of the will. No element of character is more fundamental than will-power. It is this regal faculty which gives efficiency to all the rest. Man is strong or weak, upright or corrupt, according to the attitude and strength of his will. Whatever augments the will, if rightly directed, enriches every other power. Like other functions, it is trained and developed by exercise.

It is interesting to note how admirably the sports of childhood are adapted to train and strengthen this power. In the school of nature ample provision is made for its cultivation. How instinctively do schoolboys turn to wrestling and racing. Games of strength or skill appeal to each contestant to put forth his utmost efforts. Again and again the test recurs, and each time the will marshals all its forces to attain the end desired. The youth who evinces greatest force of will becomes the leading spirit of his group of playmates or the captain of his athletic team. Thus, the man learns in his youth to meet competitors, to surmount obstacles, to face an opponent, to unite his efforts with those of others. In such ways as these, every successful man must learn early in life the joy of achievement. Napoleon said that he made his generals out of mud. He gave them something to do and then inspired them with a determination to do it. When the Duke of Wellington, late in life, sat watching a game of football among the students of Eton College, he said, "There's where the battle of Waterloo was won."

Play is a preparation for work. It soon ceases to satisfy unless it involves an end to be attained—unless, in a way, it becomes work; and it is no less true that work, in order to be at its best, must have in it some of the charm of play. It is not easy to sharply distinguish play from work. Rigid definitions fail. The boy soon outgrows the sports of childhood. The games which yesterday absorbed all his energy and filled him with delight find him listless to-day. They are to him like twice-told tales; his mind refuses to be interested, and soon feels a positive revulsion against them. Hence, the games of childhood follow one another in rapid succession, so that a few years' difference in age forms a serious barrier to the association in play of the children of the same school or even of the same family.

No one cares for play which is too easy. Tricks and puzzles lose their interest when we

know how to do them. Football and chess rank high among games because they are difficult, but sports and pastimes which require no effort become intolerably dull. Mere muscular exercise affords little enjoyment. Set your boy to run alone up and down a field, and how quickly will he tire; but give him companions and a ball, and he will play for hours with keenest delight. Among adults, play is a means of rest and recreation, not so much because it involves physical exercise as because it absorbs one's energies and turns them into a new channel. Every worker should have his avocation as well as his vocation—a congenial way of employing his leisure hours. It should be active and diverting; loafing is not play. In certain conditions of depleted health, the equilibrium is restored and full vigor secured, not by mechanical exercise, much less by idleness, but by a fresh interest. And so the skillful physician, instead of prescribing Indian clubs or a daily walk before breakfast for such a patient, ascertains his habits and the bent of his thoughts, and tries to get him absorbingly interested in some pursuit which involves appropriate exercise. He sends him on a fishing or hunting excursion, encourages him to cultivate flowers, to travel, to engage in athletic exercise,—anything to really interest him and at the same time afford proper physical conditions.

Work, in order to be at its best, must have in it some of the enthusiasm of play. It must not be drudgery. The laborer who toils merely for his wages will never find real pleasure in his work. It may be a satisfaction to him to feel that he is earning a livelihood, but he must become interested, stimulated, by the hope of promotion or the desire to excel, before he can feel true enjoyment in it. When this higher motive enters into it, his powers of accomplishment will be vastly increased. Give him an interest in the business, a share in its profits, some voice in its management, and he is transformed. Work then becomes to him an enthusiasm, a kind of game in which he has a part. He is playing for success; important results depend upon his energy and skill. The enterprising business man, like the football-player, is alert, full of vigor, and intent upon the next move. The difference between them is not very radical.

Considerable effort is made to infuse into school work an element of play. Primary teachers have complained that this is done to such an extent in the kindergarten that the children expect, when they enter the first grade, that their teachers will do all the work and let them do nothing but play. But these teachers are learning how to utilize the interest and receptivity which the



kindergarten has created and to build upon the foundation which it has laid. Better than this, they have learned to carry the spirit of the kindergarten into the work of the grades and proved its value in many ways. The dreary, monotonous drill, which was once so much extolled, has given place to enlivening exercise and joyful acquisition. The shrill-voiced wielder of the birch whose pupils shouted in concert their answers to set questions has found other and, let us hope, more congenial occupation. Does the kindergarten "lack system?" Do the children ask too many questions? Let us be glad. Why should not the restless, inquisitive instincts of the child be captured in their first joyful unfolding and turned to account in his upbuilding? Countless phenomena in nature and life appeal to his curiosity. He needs to know about them. He will never again be able to acquire and assimilate the knowledge so easily. Teach him the things which he can learn; do not arrest his development and make him hate school by trying to "drill" into him a knowledge of laws and processes which he cannot comprehend. Lack of appropriate intellectual food is often the lot of deaf children. Deprived of the principal means of communication with their fellows, they have but little to interest them. Consequently, as Andral says, the deaf mute "remains habitually in a state of half childishness; not because he is constitutionally inferior to other men, but because his powers are not developed by intercourse."

A few years ago an instructive experiment was tried in certain schools in the city of Paris. Four carefully selected teachers were each assigned to the duty of teaching a class from the time the pupils entered school until they completed a seven years' course of study. There was to be no crowding, no marking time. The pupils were not selected, and the conditions were as usual, except the ability of the teachers. Each class completed the work in less than four years—a suggestion of the possibilities which await our schools as their teachers become more skillful and enthusiastic.

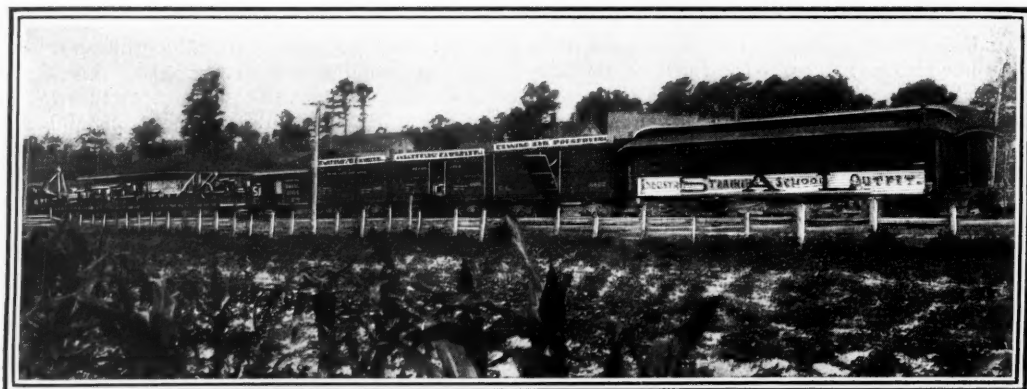
In the best schools, increased attention is everywhere given to the pupil's interest. More effort is made than formerly to secure it. As he becomes more mature, his ambition is appealed to and ideals of superiority and high attainment are held before him. His real preferences and aptitudes are sought out and encouraged; great freedom is given him in the selection of his studies and in many details of his work. In the college, and even in the high school, he is invited to undertake original problems and investigations, and to work out for himself in the library or the laboratory the solutions desired.

It is true that he might sometimes learn the required facts more quickly by consulting a textbook or listening to a lecture. But this would tend to make him weak and a copyist; what is desired is that he should become strong and self-reliant. "If truth," says Lessing, "were a bird which I held in my hand, I would let it fly away, that I might have the pleasure and the benefit of catching it again." Education involves earnest action; it is not acquired without effort. The classical and literary studies, scarcely less than the sciences, have felt the vitalizing touch of the new movement.

It has been said that "nature determines the mental caliber and education merely smooths the bore and makes the aim precise." This is a fundamental error, but too much of our teaching has been based upon it. Training in forms, in expression, has its place; it need not be undervalued. But the great purpose in true education is the development of power. Culture is fine, crudeness is a hindrance, but culture and crudeness are alike insignificant when there is no power behind them. The great need is strength. There are processes which are carried on in the name of education that diminish rather than increase mental force, that make *dilettantes* and triflers rather than earnest men and women. There are aims and ideals which enfeeble the moral stamina and the intellectual grip, which take spring and earnestness out of both work and play, leaving young men incapable of great exertion and paralyzed by the belief that genuine enthusiasm is in bad form. An eminent professor in one of our leading universities attributes the repeated failure of his institution in intercollegiate debate to a lack of moral earnestness among its students.

The best type of business or professional man is one who is able to focus his energies and bring them to bear upon a definite subject, to hold them steadily to the matter in hand with a grip which is quiet and easy, but firm. He may or he may not be familiar with the methods of investigation pursued in modern science, but he unconsciously follows them in the search for truth and the detection of error. He is intensely in earnest, and is able to say, with Lord Chancellor Coke, *Labor ipse voluptas*. Such men find exhilaration in their work, a keen delight in maturing their plans, in overcoming the obstacles which they encounter.

What is required in our school work is that which is needed for successful work in every-day life—vitality, spontaneity, zest. It is more important in the school than in the office, because the ulterior aims and motives of real life are largely wanting in the school.



SEABOARD AIR LINE INDUSTRIAL TRAINING-SCHOOL, INCLUDING ROAD OUTFIT.

## THE GOOD ROADS MOVEMENT.

BY MARTIN DODGE.

(Director of the Office of Public Road Inquiries, United States Department of Agriculture.)

THE concentration of population and wealth in the great cities during the last two decades has modified to some extent the road question, but it has not diminished the necessity for road improvement. That necessity is upon us now to a greater extent than ever before, and the beneficial results which will attend a suitable improvement of our highway system will greatly exceed the cost of such improvement.

The rapid change from rural to urban population is manifested by the diminishing proportion of the whole people now found in the rural districts, by the absolute diminution of numbers in many sections, by a deterioration in the quality of those remaining, and by an unprecedented accumulation of wealth and population in great cities. These facts have a discouraging aspect from one point of view, but when considered in relation to the economic law that produced them the situation is not unhelpful. If we can penetrate the "open secret" which underlies this wonderful transformation, we shall find that cheap transportation is the chief factor. There are no great or rapidly growing cities except those that have the cheapest existing means of transportation over both land and water. Cincinnati and St. Louis have failed to keep pace with Cleveland and Chicago mainly because the first-named cities could not obtain such cheap transportation as has been developed on the Great Lakes during the last twenty years. So long as the great rivers furnished the cheapest means of transportation the cities built on their banks maintained su-

premacy; but when the cheapest means of transportation was no longer theirs, the scepter departed.

"There be three things that make a nation great: fertile fields, busy workshops, and easy means of transportation." The fertility and extent of our fields have developed the food products in such cheapness and abundance as never before known. Our busy workshops, by the division of labor and the application of machinery, have increased the power of production many fold—"Some thirty, some eighty, some an hundred-fold." But this cheapness and abundance of food could not be utilized, nor the increased productiveness of labor be attained, without the cheap means of transportation whereby the food and the materials for manufacture can be assembled together in the centers of population. It is only by assembling together the people, the food, and the materials of manufacture that the great increase in the productiveness of labor is possible. It never appears where primitive and solitary methods of employment prevail.

The cost of transportation on the long haul over both land and water has been greatly cheapened, even beyond the expectations of the most sanguine, within the last generation. But the cost of transportation over the common roads by animal power remains almost as high as it was two generations ago, and almost as high as it is in such poorly civilized countries as Mexico.

About ten years ago, Mr. Romero, then minis-

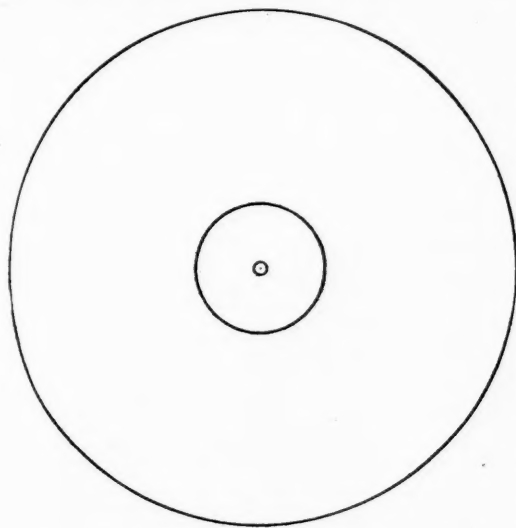
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ter from Mexico to the United States, wrote an article, which was published in the *North American Review*, to show that the low wages of Mexico was due largely to the high cost of transportation in that country. And in that connection he stated that the lowest cost by animal power was 26 cents per ton per mile, being over the road from Vera Cruz to the city of Mexico.

I desired to make a comparison of cost in this country, and as chairman of the Ohio Road Commission, in 1893, found and reported that the average cost in the State of Ohio per ton per mile by animal power was 25 cents. I quote from the report—

The following diagram of concentric circles is submitted for the purpose of showing the relative distances which freight may be carried for the same cost by the different means of transportation now in use; that is to say, horses and wagons, electric street cars, steam cars, and steamships upon the Great Lakes:



The inner circle has a radius of five miles, and the average cost of carrying a ton five miles with horses (which is the most expensive of any power in use) is \$1.25, being 25 cents per ton per mile. The second circle and the next larger one has a radius of 25 miles, and represents the distance which a ton can be carried without additional cost by substituting electric cars for horses and wagons. This is estimated at 5 cents per ton per mile. The third circle represents the distance covered by the steam cars, the radius of the circle being 250 miles, the average cost per ton per mile being only 5 mills.

The outer circle has a radius of 1,000 miles, and represents the distance which can be reached by the steamships upon our lakes without additional cost; that is to say, the average rate of transportation per ton per mile is  $1\frac{1}{4}$  mills, which makes for 1,000 miles \$1.25, the same as the cost for carrying a ton five miles with horses.

It will be observed that the proportion between the distances covered by the different kinds of transportation in use is as follows: Beginning with horse-power, which is the most expensive and covers the shortest distance, we have:

		Per ton.
Horse-power.....	5 miles, cost of transportation,	\$1.25
Electric ".....	25 " " "	1.25
Steam cars.....	250 " " "	1.25
Steamships on the lakes	1,000 " " "	1.25

In 1896, Gen. Roy Stone, at that time director of the Office of Road Inquiry, United States Department of Agriculture, Washington, D. C., issued a circular in which he stated, after two years of investigation of this subject with the aid of the division of statistics of the Department of Agriculture, that reports had been gathered from 1,200 counties, giving the average length of haul in miles from farms to market or shipping points, the average weight of load hauled, and the average cost per ton per mile. The figures show that the average cost per ton per mile in the Eastern States is 32 cents; in the Northern States, 27 cents; in the middle Southern States, 31 cents; in the cotton States, 25 cents; in the prairie States, 22 cents; in the Pacific coast and mountain States, 22 cents; and in the United States, 25 cents—thus confirming to a fraction the figures published in the report of the Ohio Road Commission in 1893.

It appears by the foregoing that the cost of transportation on the long haul over both land and water is very cheap, and that the cities have been greatly benefited by such low rates. It also appears that the cost of transportation by animal power in the country is very high, and that the rural districts have greatly suffered by the loss of population and wealth.

Now, if the people in the rural districts would imitate the prudence of the people in the cities, by securing, so far as possible, cheap transportation for themselves over the country roads, they would find in a short time increasing population, increasing value of agricultural lands, increasing profits of industry, and increasing rewards for labor bestowed upon land.

How can this be attained? We know that in Europe the cost of transportation over improved roads is only about 7 to 8 cents per ton per mile, or about one-third the average cost in this country. We also know that the annual cost of transportation in this country over the common roads is about \$1,000,000,000. Two-thirds of this great sum could be saved by an improved system of highways. How can we get such a system? This is not an easy question to answer. The impoverished condition of the rural districts makes it difficult if not impossible for them to bear the entire burden of the cost of such im-



A FARM WAGON FITTED WITH SIX-INCH STEEL WHEELS.

(It will be noted that one wheel is of the old-style narrow tire. The owner reports that while hauling lumber the narrow wheel caused him considerable trouble by sliding off small stones and cutting deeply into soft ground, while the wide-tired wheels gave him no trouble at all.)

provement. In order to remedy this condition of affairs, we propose a system of State aid whereby the State shall bear at least one-half of the cost of improvement, the same to be paid out of a general fund. By taking this money out of a general fund, the concentrated population and wealth of the great cities are made to contribute their proportion of the cost, and at the same time the people in the rural districts are partially relieved of a burden that otherwise would be greater than they could bear. All corporations, as well as all natural persons, contribute to such a fund, and so help bear the burden of building good roads.

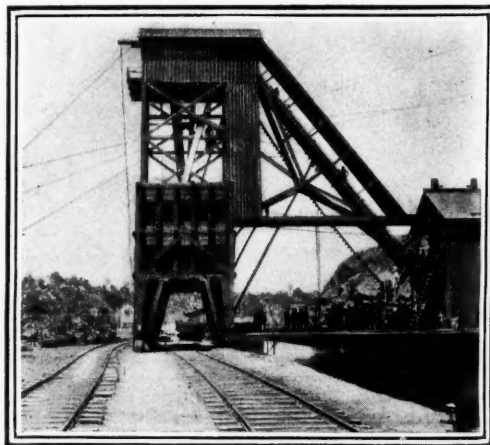
In addition to this, we propose that all prison labor shall be directed to the building of good roads or the preparation of materials to be used therefor.

There is a great army of prisoners now and at all times in the United States whose labor would be of great value if directed to this work. At the present time, these prisoners add little or nothing to the common wealth; whereas, if their labor were properly directed along the lines suggested, a permanent addition of great value would be made each year. It is not necessary that these prisoners should be worked on the highway, if that is thought objectionable. They can be worked in inclosures, as they now are, only they should produce road-building materials suitable for the permanent improvement of the highways,

such as crushed stone for macadam roads or bricks for pavements. These materials can be transported cheaply to their destination, and laid upon the highways by free labor. This method will eliminate competition with free labor and also competition with manufactured articles of commerce. The work here proposed is not being done by free labor, and is not likely to be undertaken unless we bring every aid to our assistance, so as to cheapen the cost. The manufacturers of commercial articles complain of the competition of prison-made goods; but there is no such thing as getting the proper building of roads too cheap. This is not a new proposition. Prisoners have often been employed at making roads and road-making materials ever since the children of Israel made "bricks without straw" in the land of Egypt.

The States of New Jersey, New York, Massachusetts, and Pennsylvania have passed laws in recent years providing for State aid in the matter of highway improvement. Maryland, Virginia, and North Carolina have passed laws providing for highway commissions, while South Carolina, Florida, and Mississippi have passed laws providing for the application of prison labor to the highway problem.

In addition to what the States can do for themselves, the United States may properly do much.



PUBLIC ROAD IMPROVEMENT WORKS.

(Elevator, screens, and storage bunkers, Folsom State Prison, California.)

It is a notable fact that the low rates of transportation already obtained on the long haul over land and over water have been obtained very largely on account of the aid and encouragement given them by the general government at Washington. Many millions of dollars have been appropriated by Congress annually in the



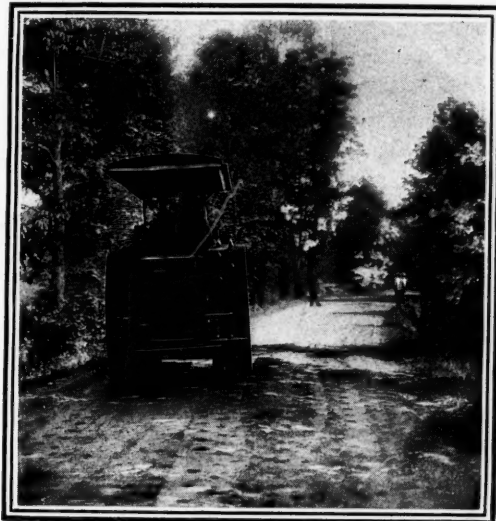
river and harbor bill to deepen the rivers and harbors and the water communication between the Great Lakes. Subsidies of land and loans of money have been freely granted to the Western railroads to aid in cheapening transportation across the plains and over the Rocky Mountains. There is no reason why aid should not be given by the general government to assist in cheapening transportation on the common highways.

We should bear in mind also that no great system of highways was ever built up and maintained in any country in the world without the substantial aid and encouragement of the general government of the country.

It is true that our Government at Washington has taken the matter up in a small way within the past eight years. In 1893, Congress appropriated a small sum to enable the Secretary of Agriculture to make investigations touching the question of road-building. Each year, from that time on, Congress appropriated \$8,000 to continue the work, until last year, when it increased the amount to \$14,000; and for the present year the sum of \$20,000 has been appropriated.

For about six years, Gen. Roy Stone was director of the Office of Road Inquiry (a division of the United States Department of Agriculture), having in charge the investigations. For about two years, the writer has served as director. The limited appropriation so far made by Congress does not permit any very extensive work in actual construction.

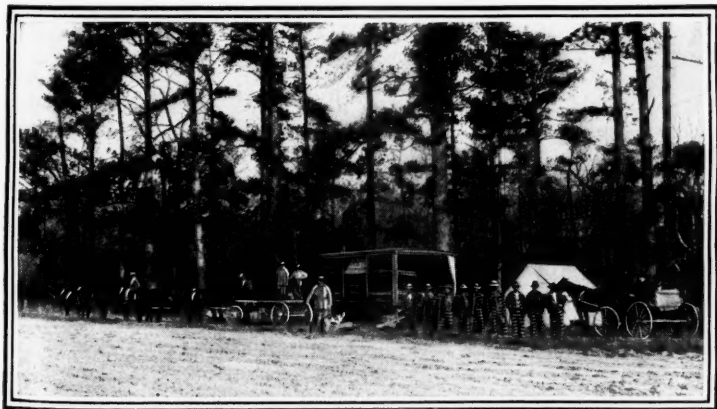
Scientific experts are investigating all kinds of road-making materials, both in the field and in the laboratory. Professor Page, lately of Harvard University, has charge of the laboratory at Washington for testing rock and other road-making materials. We have published many



PREPARING GOVERNMENT SAMPLE ROAD, HOT SPRINGS, VIRGINIA.

pamphlets giving the results of investigations made, and these are distributed free to citizens desiring them. I have also added the object-lesson method to the instruction formerly given by didactic literature, and have built several object-lesson roads in different States. The most extensive tour of this kind was undertaken in connection with the good roads train which, early last summer, went over the Illinois Central Railroad from Chicago to New Orleans. The National Association for Good Roads (of which Col. W. H. Moore, of Chicago, is president and R. W. Richardson, Esq., of Omaha, is secretary), the Illinois Central Railroad Company, and the Office of Road Inquiry cooperated on this tour,

and made object-lesson roads at New Orleans, Natchez, Vicksburg, Greenville, Clarksdale, Oxford, and Jackson, Miss.; Jackson, Tenn.; Hopkinsville, Louisville, and Owensborough, Ky.; and at Mattoon and Effingham, Ill. At each of these places a permanent organization for good roads was formed, and in each State one permanent State organization was formed. This tour lasted for nearly a hundred days, ending August 1, 1901. On September 16 we opened a great Good Roads Congress at



ROAD-BUILDING BY CONVICTS IN SOUTH CAROLINA.



ROAD MACHINE AT THE PAN-AMERICAN EXPOSITION, BUFFALO, DURING THE INTERNATIONAL GOOD ROADS CONGRESS.

Buffalo, N. Y., which continued for a whole week, having delegates from nearly all the States and some foreign countries, closing September 21 with Good Roads Day on the grounds of the Pan-American Exposition.

The Governor of Florida was chosen permanent chairman of the congress, and the Governor of Mississippi reported to the convention that his State was never so aroused on the question of good roads as since the good roads train had visited it.

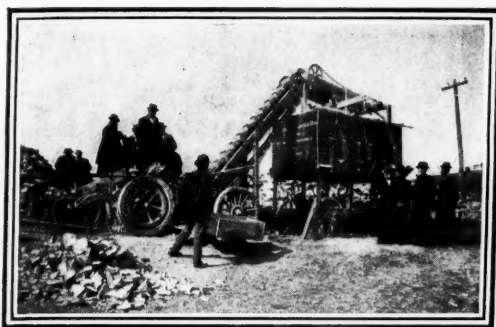
The proceedings of the congress will be published in full by the Government, and will be furnished free to all who desire it. The good roads train, with its entire equipment of modern machinery, was also displayed on the grounds of the Pan-American Exposition on Good Roads Day. We had ten carloads of modern road-making machinery, furnished by the different manufacturers, and transported from Chicago to the Exposition by the Lake Shore Railroad Company. An object-lesson road was also built on Grand Island, where the successful use of this machinery was fully demonstrated.

It is not too much to say that we look to the use of modern road-making machinery as a means to reduce the cost of construction fully one-half.

We have in the State of Ohio approximately 80,000 miles of highway, and in the entire United States probably 3,000,000 miles. Of this great mileage, only about 1 per cent. has been improved by making the surface hard and smooth with any sort of paving material. Ninety-nine per cent. of the entire mileage remains as earth roads. In order to improve any large proportion of this great mileage, we must have economical methods of handling the road material. In recent years, many labor-saving machines have been invented and successfully applied to the problem.

Of the earth-handling machinery, the elevating grader, sometimes called the "New Era," manufactured by the Austin Company, Harvey, Ill., is the greatest triumph. It consists of a mammoth plow mounted on four wheels and propelled by twelve animals or by a traction engine. The furrow is rolled on to an endless chain or belt which constantly moves at right angles with the plow, and carries the furrow up an inclined plane from four to six feet above the ground and from twelve to thirty feet away from the plow. The dirt falls in a continuous stream from the end of the carrier, and is deposited in the form of an elevated turnpike. When it becomes necessary to transport the dirt any considerable distance, wagons are driven under the end of the carrier, and the deposit of dirt is received by the moving wagon. In either case no shoveling or rehandling is necessary. The wagons not only receive their loads while moving, but they are supplied with automatic dumps, and discharge their contents without stopping. By this wonderful invention dirt can be moved from the ditches at the sides of the road to the turnpike in the center at the rate of four cubic yards per minute, and at a cost of from two to four cents per cubic yard. By the ordinary methods generally employed it costs from ten to thirty cents per cubic yard to move the earth so as to form a turnpike. The application of the "New Era" under favorable circumstances will reduce the cost of making earth roads from \$500 per mile to \$100.

Such a turnpike, when smoothed by a blade machine and rolled by a steam roller, will make an excellent road so long as it remains dry. But water is sure to soften the surface. It is therefore desirable to harden the surface by depositing some suitable substance on the top of the earth road. The most suitable substance generally used for this purpose is broken stone. It is



ROCK-CRUSHING OUTFIT USED IN OBJECT-LESSON ROAD-BUILDING IN PENNSYLVANIA.

very common for persons improving roads to suppose that large stones are necessary as a foundation to sustain the weight of the traffic. This is a mistake. It is neither necessary nor desirable to have any large stones in the roadbed anywhere. The entire roadbed should be formed by the use of angular fragments of rock reduced to a uniform size by crushing and screening. No stone should be used whose greatest dimension is over two and one-half inches. These angular fragments, so reduced to a uniform size and spread upon the roadbed, will consolidate under pressure with moisture so as to form one homogeneous mass that will not only be hard, smooth, and durable, but it will also be impervious to water, which is the greatest enemy of the road. So long as we can keep the roadbed dry it will be good. Hence, the Hon. A. W. Campbell, deputy director of public works for the Province of Ontario, Canada, says that the three essential principles of road construction are: "Drainage, drainage, drainage."

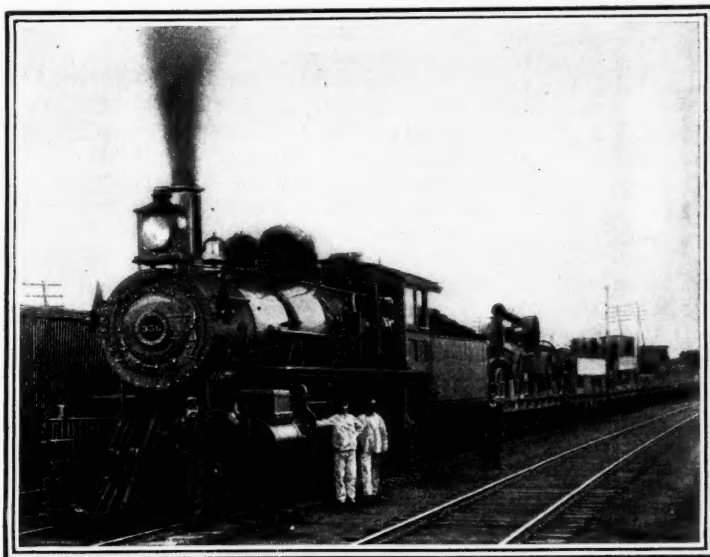
The original method was to break the stone by hand-laborous hammers. This was laborious and expensive. We now have many varieties of stone-crushers or stone-crackers run by steam power, and can produce great quantities of the most desirable road-building materials at comparatively little cost. The hardest granite boulders are easily cracked and reduced to angular fragments by these rock-crushers. We are, therefore, able to utilize for road construction much ma-

terial which heretofore was not available, but which was actually an incumbrance on the land. Trap rock, which is the best for finishing the surface of a much-traveled road, is made available now, though it was too hard to be reduced by the hand process. We have automatic spreading wagons which enable us to place this material on the road with but little hand labor. The material is loaded from elevated bins by gravity and spread from wagons with automatic dumps. Good, durable roads can be produced at about \$5,000 per mile.

The latest and most novel method of educating the rural districts up to the most intelligent methods of road-building has been the "good roads trains," sent out on extensive itineraries through the most backward regions! Since the Western demonstration was made, a Southern "good roads train" has started, and is at this writing still on its mission of enlightenment.

This train left Washington, Tuesday, October 29, 1901, for a tour of the Southeast over the Southern Railway. It is thoroughly equipped with road-building machinery and expert road-builders and engineers. Many object-lesson roads will be built along the lines of the Southern Railway system during the trip of three months' duration.

The running of these industrial trains through the South will mark a new era in all that section of the country. Almost half a century has elapsed since the South enjoyed anything like general industrial and financial prosperity till the



"GOOD ROADS SPECIAL TRAIN" ON THE SOUTHERN RAILWAY.

present time. She was prostrated by the Civil War, while the North enjoyed a season of great prosperity extending up to the panic of 1873. During the next twenty years there was a great revival of industrial prosperity in the North and East, which manifested itself principally in the growth of cities and manufacturing establishments. But the South had no share in this, for she had no manufacturing industries and few cities, and they grew but slowly. On the contrary, agricultural lands and products went down during this entire period of twenty years. Then came the panic of 1893, which prostrated industry of every kind both North and South. Since the revival of business following this great panic the South is beginning to share for the first time in almost half a century in the prosperity which is so extensive as to include all sections of the country and all classes of society. The numerous conventions held at the various places in the South where the good roads train built object-lesson roads, the great numbers in attendance at these conventions, and the enthusiasm expressed, as well as the continued and increasing demand for the train to continue its work, all show that the South has come to understand that the War of the Rebellion is over, while the war of industry goes on forever. They have learned that communities, states, and nations only maintain themselves in the long run by their industrial activity.

With the reduction in the cost of building good roads that may be effected by the various means, and with a fair distribution of reduced cost on all the people of the State, there can be no question as to economic gain that will result from a general improvement of the highways of the various States. Wherever such improvements have been made there appears at once an increase in the value of the adjacent land which more than compensates for the tax required for construction.

The landowner is not only benefited by the improvement of the road, but all those living in towns and cities are also benefited. If in no other way, by the cheapening of many farm products that are required for daily consumption in the villages and cities.

The products of the farm go in, but the people of the cities go out into the country. The bicycle, the automobile, and the suburban street car all run on the country road; and the people who come out of the cities by these new and wonderful means of transportation now but lately applied to the country highways should all contribute to their construction and maintenance. And I am glad to say the cities are ready and waiting to do their part and so lighten the burden. Most of the roads now being built are built from funds to which the city people contribute as well as the country people.

## BURNT CLAY FOR ROADS IN THE WEST.

BY CHARLES ROLLIN KEYES.

ECONOMIC problems rarely afford maximum results directly from minimum efforts. It is paradoxical to derive from the worst of anything the best. It is manifestly illogical to regard two extremes as occupying at once one and the same place. Yet these very conditions are the strange anomalies actually presented by many of our public highways.

In the permanent improvement of rural roads, the usual method of macadamizing with stone rubble is the most widely adopted method. This is the plan followed in France, England, and other European countries, where the good roads are the wonderment of all Americans. The same plan is also carried out in many of the older parts of our own country. In all localities where natural rock exposures occur it is possible to obtain the same sort of road-metal at a cost that is regarded as comparatively low.

There are, however, many places where practically no suitable ledges of durable rock are found. The vast coastal plains and much of the broad Mississippi Valley are such regions, largely devoid of hard rock for road-metal. Throughout much of this extensive territory the country roads, during certain portions of every year, are certainly the very worst imaginable. Every low place in a road, every swale between hills, becomes in wet weather a mire without bottom, often impassible to vehicles and even the beasts of the field. As a chain is no stronger than its weakest link, so a highway is no better than its worst stretch.

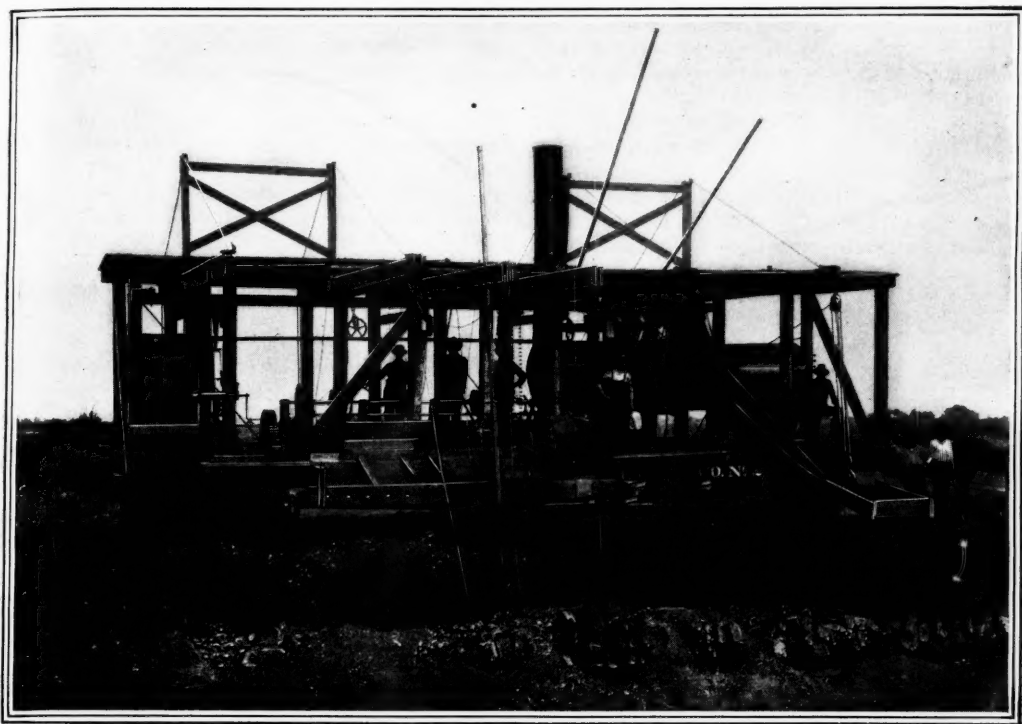
Now, when we come to examine into the composition of the mire, we find that it is made up of the stickiest of sticky muds. The mud adheres with a tenacity of many pounds to everything that it touches. Strange as it may seem,

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MACHINE FOR HANDLING BURNT-CLAY BALLAST ON RAILROADS.

this highly developed property, which is technically called plasticity, is the very property that makes this very mud a very superior material for road-metal. The "worse" the mud, the better the quality of road-metal it is possible to obtain from it. It only has to be simply and properly treated. The magic change is accomplished by thoroughly baking, or "burning," the mud.

Of late years, burnt mud, or burnt gumbo as it is more widely called, has been extensively used in the central West for railroad ballast. In Illinois, Missouri, Iowa, and the neighboring States the trunk lines of railroad are largely ballasted with this burnt gumbo. Its use is, therefore, beyond the experimental stage.

While at first it was intended that the burnt gumbo should take the place of natural rock ballast in those localities where the latter could not be readily and cheaply obtained, its superiority over stone was soon proven to be so great that it is now widely used even where there are good rock ledges. A brief account of its use by the railroads will demonstrate its advantages for highway road-metal.

As burnt gumbo appears as ballast for the railroad track it is a red, gravelly material, in which the fragments are sharply angular in shape, very

porous, and very hard. On the whole, it is not unlike coal cinders in appearance, except that the color is red. On account of the high amount of shrinkage while being burned, and the great strength when in the state of mud before burning, the muds, or very impure clays which compose them, easily fall into small pieces. At the same time, being so very impure, these clays require only a very low temperature to be readily burned very hard.

The economic and engineering points of merit which burnt gumbo possesses as railroad ballast are many. Among them may be especially mentioned economy in handling, ease of bringing the roadbed up to a high degree of perfection, readiness with which repairs may be made, elasticity of roadbed, general absence of weeds along the track, remarkable freedom from ice and snow in winter, and, more important than all, low first cost.

The railroads handle the clay and carry on all operations connected with its burning by machinery. The burnt gumbo, ready for use, can be delivered on board the cars at a cost of 25 to 35 cents a cubic yard. When burned by hand, as would usually have to be done in highway improvement, the cost would be, perhaps, 10 to 15 cents more. The railroad gumbo pits are

often a mile or two long and hundreds of feet wide. In the case of the highways, the mud would merely have to be shoveled out of the roadway, burned, and shoveled back.

While for macadamizing purposes on country roads burnt gumbo is not quite so durable as some of the best grades of rock, it has many advantages to offset this one shortcoming, slight as it is. The process of producing burnt gumbo requires practically no capital or great skill to carry on. The most ordinary labor and a little common sense on the part of one person, as overseer, can produce the best of results. Of course, the road should be properly graded and crowned before putting on the gumbo road-metal. A surface of burnt clay, six to eight inches in thickness, is commonly sufficient for good results; or ten inches in particular places, where unusual conditions exist or traffic is especially heavy.

By selecting for improvement the heaviest parts of the road first, since the worst stretches are often caused by the very material that makes the best grade of road-metal, and systematically working under intelligent guidance, five years would find every principal highway in a county as passable the year around as a paved city street, and at very little more cost than is now usually squandered on "working the roads." The county surveyor could easily superintend the whole work for his district; and, with local overseers as head burners, he could soon produce as good a system of highways as any one could wish for. Once properly prepared, two men could easily keep the roads of a whole county always in good repair.

With no more expenditure of money and effort than is now put on the country roads, ballasting with burnt clay would produce in a dozen years a system of highways equal to any of those for which France has so long been famous.

A burnt gumbo road is never muddy, for that property is lost in the burning. The surface of the road is hard and smooth. As a speedway for bicycles and automobiles it is ideal. For carriages and heavy wagons it has no superior. No vegetation can grow on it. It is practically free from dust, after the highway system has been well developed, so that mud is not brought in from the tributary roads. More-

over, the warm red highways contrast pleasingly against the green landscape at those seasons of the year when country drives are most enjoyable.

The process of burning clay is quite simple. Along the roadside, cordwood is piled to form a low pyramid or ridge 8 to 10 feet wide. On this is thrown 3 to 4 inches of coal slack, and 12 to 20 inches of gumbo mud, which is cut from the roadway, or a pit, as the case may be. On firing the wood, enough air enters the pile to enable slow combustion to be carried on without the generation of too much heat, which would vitrify the clay.

When a "pit" is made, as often is necessary when burnt gumbo has to be hauled some distance, or, as is the usual way with the railroads, new additions of slack and mud are added each day on one side of the pyramid, while on the other side the burnt gumbo is allowed to cool and is then carried away. In this way the pit advances sideways a few feet a day until it has become several hundreds of yards across.

The gumbo clays have many notable qualities, besides being excessively sticky in wet weather, enabling them to be readily distinguished. They usually form what the farmer calls cold, sour soils. These soils cannot be tilled to advantage. The land occupied by them is almost worthless, except, perhaps, for scant pasturage at certain seasons of the year. The clays absorb and are capable of retaining an immense amount of water, often so much as twenty-five gallons to a cubic yard.

Permission to locate a railroad ballast pit on some farmer's gumbo land is usually readily obtained. He not only gives his consent and the use of the land free, but he is secretly delighted at the idea of having the railroad excavate without cost to him a big pond for his stock.

The best clays for making burnt ballast are distinguished by certain physical properties. They are very plastic, quite impure, very fine-grained, and tenacious. Their tensile strength is enormous, often as high as 400 pounds to the square inch. The shrinkage is very great—10 to 12 per cent. in the drying and burning process. These are the technical tests for recognizing these clays. A ready, practical test is to find the very worst stretch of a muddy country highway.



# IRRIGATION IN THE WEST.

## A PLAN OF ACTION FOR THE NATIONAL GOVERNMENT.

BY WILLIAM E. SMYTHE.

(Author of "The Conquest of Arid America.")

TO Theodore Roosevelt falls one of the rarest opportunities that ever came to an American President—the opportunity to write his name and fame on the face of the enduring earth. And why his opportunity more than McKinley's and all his predecessors? Partly because of the time of his accession to power. Events ripen with the years, and the one which brings to him the chance of supreme usefulness grows mellow in the morning sun of the twentieth century. But more yet because the opportunity is in the West—the unknown, the unappreciated, the half-derided West of arid America. It happens that Theodore Roosevelt knows this West, and loves it well. He has scaled its mountains, camped beneath its cottonwoods, heard the music of its waters, beheld the mystery of its cloudless skies and rich but rainless soil. He is reported to have remarked at Buffalo, when visiting that city in the early summer for the purpose of opening the exposition: "I am of the sixth generation born on Manhattan Island, but I belong west of the Missouri River." And it is west of the Missouri River that there waits his opportunity to give the nation the greatest industrial impulse it has received since the phenomenal settlement of the Mississippi Valley.

The opportunity is one of constructive statesmanship in the largest sense of the term—such constructive statesmanship as Napoleon and Cavour gave to France and to Italy, as English administration gave to India and to Egypt, and is now giving to Australia and to Canada. It is the opportunity to inaugurate the true economic conquest of half a continent, and to found its institutions on the everlasting rock of justice and sound public policy.

The problem is not merely to store the flood waters and have them distributed over millions of acres in the highest degree fit for homes, but to have the works essential to this result so constructed and so administered as to preclude the possibility of a private monopoly in water; to have the lands opened to settlement upon such terms as shall put them in the hands of honest homemakers rather than of speculators; to remedy far-reaching evils inherent in the present

system of handling two hundred million acres of grazing lands; finally, to protect and perpetuate the forests which hold the sources of the streams and constitute the timber supply of future generations. All these problems are web of the same woof. All cry aloud for settlement, and all could be measurably solved by a single comprehensive stroke of legislation. And it most singularly happens that, at the moment when these issues are irresistibly rising into national prominence, the only President who ever realized their importance enters the White House through the door of chance.

### THE PRESENT SITUATION.

From the time of its foundation, the United States Government has owned, altogether, about two billion acres of land, acquired by occupation and purchase, by cession and conquest. Three-quarters of this almost incomprehensible area has now been disposed of by a variety of methods, most of which were wasteful and improvident. Of the remaining five hundred million acres, practically all lies between the one-hundredth meridian and the Pacific Ocean, in the region of deficient rainfall. Nearly half of it is fit only for pastoral purposes; much is enormously valuable for timber and mineral; enough could be reclaimed by irrigation to make homes for another population at least equal to the total enumerated by the recent national census. In other words, the present productive capacity of the United States could be duplicated upon the remaining public domain if only its resources could be made useful under wise policies of development. Such policies have not been supplied by national legislation. They cannot, of course, be created by the several States, which are utterly powerless to deal with property belonging to the federal government. Thus it happens that this great region is bound hand and foot by a system of laws utterly unsuited to its conditions.

Without irrigation the agricultural lands are worthless for cultivation. All the lesser opportunities for diverting water from the streams have been successfully utilized by farmers, working on a cooperative basis. There have been many dar-

ing attempts to construct large irrigation systems with private capital, but almost without exception they have met with financial disappointment. The amount thus invested is doubtless in excess of a hundred millions, and probably not 1 per cent. of it has returned satisfactory dividends. This somber fact is due in part to illogical water laws, which have led to ceaseless litigation; in part to the nature of the investment, which requires many years to develop its full earning power; and more yet to the fact that the business of handling water in arid lands is in its essence a public rather than a private function.

There is much more land than water. The water controls the use and value of the land. It is, therefore, a natural monopoly. From this condition there is no possible escape, and the monopoly becomes more urgent and complete with every acre of land put into cultivation. Shall this monopoly be public or private? The attempt to make it a private one has largely failed; where it is otherwise, a system has grown up that is big with social peril. In all foreign lands where irrigation is practiced, water is treated as a public monopoly, but there are no laws which make this possible now on the arid lands of the United States. How, then, is "Uncle Sam's farm" to be watered and made habitable? It is a property which, in Nevada, covers 95 per cent. of the whole State, and which constitutes so large a part of nine other commonwealths as completely to dominate their economic character. The present condition is one of utter stagnation, which is intolerable alike from local and from broad national standpoints.

The land regulations governing the public domain are ill suited to the needs of the far West. The homestead law, though elsewhere associated with great achievements, is a misnomer where land must be watered before it can be tilled. To offer a man a home where he cannot possibly live without improvements beyond his power to provide is oftener than otherwise an invitation to disaster. The desert land law was framed to meet the conditions of aridity, but in the majority of instances serves no purpose of honest settlement. It is notoriously used to enable individuals and companies to acquire public property for private speculation—a sort of anæsthetic administered to the people in order that large tracts of valuable land may be painlessly amputated from the national estate.

The conditions surrounding the vast area of grazing lands—Uncle Sam's two-million-acre pasture—are not those of law, but of anarchy. It is a great common open to public use without restrictions and without the slightest attempt at administration. Cattle men and sheep men strug-

gle for the possession of property which belongs to neither. This preposterous condition has often resulted in armed conflict and bloodshed. But those controlling springs and river-fronts have an important advantage, since cattle and sheep require water as well as men.

The public forests are burned and looted. By the use of convenient relatives, employees, and other "dummies," they are acquired at nominal prices, and then consolidated into large tracts, to be held against the needs of the future at "all the traffic will bear."

Mines of precious and base metals, quarries of building and ornamental stone, and lands rich with oil are turned over to men of enterprise for practically nothing, without even the payment of a royalty upon the actual product to the generous government that owned them but yesterday.

The people of the United States are still owners in fee simple of resources in the form of land and water, of timber and mineral, representing a sum of wealth which is simply incalculable. It is sufficient to pay the national debt many times over, to build the isthmian canal, to foot the bills of all the wars likely to occur in the present century. But the laws governing the use of all this natural wealth are so weak and ill-considered that they may truthfully be characterized as worse than no laws at all. Indeed, it would be infinitely better for the country and for the West if all existing legislation providing for the acquirement of land, water, timber, and mines on the public domain could be repealed pending the provision of a great national policy suited to the conditions and to the times. To save this wealth for the people to whom it now belongs, to direct its use to the creation of important public improvements, to lay the foundation of millions of homes on the basis of economic freedom and social equality,—this is the peerless opportunity of the President of that United States who, in his heart of hearts, feels that he "belongs west of the Missouri River."

#### FROM THE NATIONAL STANDPOINT.

The issues involved in the future use of the public domain are preëminently national in their character. These lands and waters, these forests and minerals, are the heritage of all the people of the United States. New England and New York, Chicago and St. Louis, could not have been what they are to-day except for the material development which has occurred in consequence of a policy of domestic colonization consistently pursued over a period of two centuries. No American city or State can draw a line and say, "Beyond this boundary we have no interest in the country's development." Local great-



ness is part and parcel of national greatness. This view, readily justified upon abstract grounds, is equally capable of concrete demonstration.

It may be said, for instance, that the people of Boston are more directly interested in the development of the rich valley of the Humboldt than the people of Nevada themselves. Why? Because Boston possesses a surplus both of men and of money which requires a "wasteway," so that the pressure upon its civic and economic "dam" may never reach the danger point. Nevada has no surplus and needs no "wasteway." Its population is stationary, yet prosperous and contented. Whatever social explosion may come in the future, there will be no heads broken in Nevada, where forty thousand people are living in the midst of resources amply sufficient, if properly developed, to accommodate four or five million. But in some crucial hour it is entirely conceivable that Boston may yearn for Nevada's elbow-room. New England labor and capital have drawn a large share of their prosperity in the past from regions west of the Alleghany Mountains. They have found there, not only markets for surplus products, but homes for surplus population. The development of the public domain is infinitely more important to people now living in the East than to people now living in the West. To the former it means opening the gates of opportunity; but to the latter it means only a little greener pastures, for they are already within the gates.

Under these circumstances, it is in the last degree essential that the coming policy in the West should be shaped from the national standpoint. That is to say, the natural resources belonging to the United States should be so used as to confer the highest benefit upon all parts of the country. Only the nation itself is capable of making such a programme. Congress alone has the power to enact the necessary legislation. Furthermore, the representatives of the Atlantic seaboard and middle West are entirely removed from the influence of powerful interests in the localities to be dealt with. That which is for the highest national good may not always be most popular with many Western men who take a narrow view of their surroundings.

To illustrate: great cattle companies are not opposed to the unrestricted public range, since it is one of the sources of their prosperity. Lumbermen do not always take the most enlightened view of forestry. Those who speculate in land and water are not among the advocates of public irrigation works and more stringent land regulations. On the other hand, the Eastern millions who are joint owners in all this natural wealth are only to be benefited by policies which give

them easy access to it. Thus, also, the Eastern manufacturer and merchant, and the Eastern holder of railroad securities, would naturally favor the policy promising the largest settlement within a given area, in order that the new communities to be created shall have the greatest consuming power.

Hence, the problem is national, and of equal interest to California and to Massachusetts, to San Francisco and to Chicago.

#### RELATION OF STATES TO NATION.

Western rivers on which the storage of water is to be effected are, for the most part, small mountain streams torrential in character and wholly non-navigable. The control of such streams lies exclusively with the several States. Thus, while the nation owns the land, the States own the water, and must undoubtedly be trusted with the responsibility involved in its just distribution among a multitude of users. There are navigable rivers which will be used for irrigation—notably the Colorado and Columbia—but require no storage to effect the result. There are other navigable streams, such as the Sacramento and San Joaquin, which may be used in watering vast areas of private land, but do not command any portion of the public estate. Nevertheless, river improvements made under the well-established policy of Congress would largely enhance their value for irrigation, as well as for navigation.

Most of the States came into the Union with constitutional guarantees securing them in the absolute control of their waters. It is, therefore, too late, even if it were otherwise practicable, to consider any proposition looking to national administration of the water-supplies of the West. National construction of reservoirs is clearly demanded as a measure of justice and of good public policy; but when such reservoirs shall have been built, and the stored waters mingled with the common flood of the streams, the work of distribution devolves inevitably upon the several States. If any exception is to be made to this proposition, it could apply only to a few streams which are interstate in character, such as the Rio Grande, the Arkansas, and the Platte. It is quite possible that in building reservoirs upon these rivers the nation would find it necessary to stipulate in precisely what proportions the stored waters should be divided between two or three different States. With this exception, the distribution of all waters used in irrigation is a matter for local control. If it were otherwise, endless complications would arise, since the entire perennial flow of these non-navigable streams is already in use, and any attempt

to transfer their control to Washington would instantly raise the question of State rights.

#### IMPERATIVE NEED OF GOOD LOCAL LAWS.

If, then, the national government is to impound the flood-waters which another power is to distribute, it becomes imperatively necessary to the country at large that the local laws, under which distribution is to be effected, shall be such as to guarantee absolute justice to the future settlers upon the public domain. If this is not the case, the floods which have been stored at great cost may, after all, fail of their purpose. They may be frittered away in wasteful use; they may be absorbed by private lands; they may be appropriated by existing canals, and then sold to consumers. These are real dangers in many localities. How are they to be averted? Only by a rigid public administration based on practical knowledge, scientifically applied. Is such administration the rule in the States where national reservoirs are proposed? Frankly, it is not. In Wyoming alone the highest ideal is obtained, though in Colorado and Idaho good administrative systems are in operation, while Utah has made a beginning.

Several States, including California, still cling to the old common-law doctrine of riparian rights, under which no water can legally be taken from the stream except for the domestic needs of an owner along its bank. It is a law which has no place in an arid land, but which nevertheless exists to balk and hamper irrigation development. In many States there is no public supervision over the appropriation and distribution of water. Each man is a law unto himself. When the entire flow of the stream has been claimed and used, it is still possible for new-comers to make further diversions. Nobody knows how much water is carried in the channel, or how much has been legally appropriated. So also in the matter of distribution; the immensely delicate and important work is left to be fought out by contending neighbors and rival canal companies. The results are deplorable. The friction begins with social strife and ends with a tangle of litigation. The intermediate stages are often marked by bird shot and rifle balls, and the final result is discouragement and stagnation.

What will happen when national reservoirs are built without any accompanying reform of local laws? All present evils will be intensified, while in some localities the result will be little better than civil war. There is no element for which men will fight more bitterly than for water in an arid land. It is the very essence of prosperity. Aye, more—it is life! There is scarcely a stream in the West which has not been ap-

propriated beyond its normal flow. There is scarcely one where works have not been built and lands claimed in excess of the available water-supply. Under such conditions the Government owes it to itself, and to the millions of settlers who shall be invited to make their homes upon its lands when works have been built, to make sure that justice shall be done in the distribution of the water-supply. Fortunately, there is a way in which Congress can compel this result, even though the actual administration of works must forever rest with the States.

#### AN EXAMPLE OF GOOD LAWS.

The best water laws in the West are those of Wyoming, where social and legal friction on this subject has been wholly abolished. Wyoming asserts the public authority over every drop of water within its boundaries. It laid a secure foundation at the beginning by creating a tribunal to adjudicate all of the old rights upon a basis of actual beneficial use. It then decreed that water must attach inalienably to the soil, so that there could be no such thing as its ownership apart from land. Titles issue directly from the State, precisely as titles to land selected from the public domain issue from the Government at Washington. The State is divided into convenient hydrographic districts for purposes of administration. The superintendents of these districts, with the State engineer, constitute a board of control, which possesses original jurisdiction over all questions arising in connection with the use of water. The State authority measures all streams, thus obtaining a basis of exact information upon which to pass on future appropriations.

New claimants to the common supply file their application with the State engineer. If surplus water be available, a permit is granted and the work begun. It is inspected upon its completion and, if approved, a right is then issued by the State and becomes permanently a part of the land to which the water is applied. The distribution of the supply is accomplished under the direction of commissioners placed in charge of each stream. They and their assistants are vested with police powers. They lift each headgate in the order of its priority of appropriation and scrupulously measure the amount of water delivered.

Under this system, based on simple justice and common sense, Wyoming enjoys peace and prosperity, while many of its sister States are plunged in endless litigation and social strife. Such a system is utterly essential to the success of national irrigation in every State where it shall be applied. It is within the power of Congress to decree that no Commonwealth lacking a

system of administration on the lines of Wyoming shall receive one dollar for irrigation purposes. The result will be that every Western State will adopt such a system at the earliest convenient moment. And the good which Congress will thereby confer upon the West and, through the millions of future settlers, upon the nation itself will be second only to the benefit arising from the storage of flood waters now wasting in the seas.

#### A PRACTICABLE MEASURE.

During the past summer a number of leading public men in the West have conferred for the purpose of framing a wise measure aiming at the inauguration of the new national policy. They took as the basis of their discussions what is known as "the Newlands bill," introduced into the last Congress by the representative from Nevada. This provides that all moneys received from the sale of arid lands (now amounting to about \$4,000,000 a year) shall constitute a reclamation fund, to be apportioned among the several States and used for the construction of reservoirs and main canals for the irrigation of public lands. The measure limits the amount of land which may be taken by a single settler to a small farm, and fixes a price upon the property which would amply reimburse the Government for its expenditures. It also provides that surplus water not required for public lands may be purchased by private owners.

Building upon the groundwork of "the Newlands bill," the practicable measure which can command the support of the most enlightened and disinterested public sentiment in the West, and which is worthy to receive the confidence of the nation as a whole, would be framed on the following lines:

1. All arid public lands to be immediately withdrawn from settlement, pending the adoption of the new policy, with the exception of a few localities where water is already available from existing works.

2. A large annual appropriation—probably not less than \$10,000,000—to be continued over a period of at least ten years. To limit the fund to the amount now received from the sale of arid lands would not give the policy a fair trial, though even with this sum a small beginning could be made.

3. Reservoirs to be constructed on the headwaters of streams commanding large areas of arid public land in Colorado, Wyoming, Montana, Idaho, Utah, Nevada, Washington, Oregon, California, New Mexico, and Arizona. The large main canals through public lands should also be constructed by the Government, leaving

settlers to build their own systems of distributaries.

4. Land entries upon the irrigated public domain to be limited to forty acres, and permitted only to actual settlers who will agree to make certain improvements within a specified time. Subsequent transfers to be surrounded by all reasonable safeguards to prevent speculation and consolidation of small tracts into large estates. Land and accompanying water rights to be sold to settlers at ten dollars per acre, payable in ten annual installments, with 4 per cent. interest on deferred payments.

5. Water in excess of the needs of public lands in any given locality to be sold to private owners at the price of ten dollars per acre.

6. A national commission of three members to be created, consisting of one representative each of the departments of Agriculture, War, and the Interior. It would be the duty of this commission to consider and pass upon the engineering and economic character of all proposed works, and to supervise their construction on behalf of the Government.

7. Works to be built only in such States and Territories as shall have provided an adequate system of local administration, assuring the just distribution of water on the basis of actual beneficial use, and attaching it inalienably to the land irrigated.

#### MERITS OF THE PLAN.

This plan meets all the needs of the situation, and reconciles the delicate relations arising from the divided ownership of land and water between the several States and the nation. The national government constructs the works; the various State governments administer them; the water attaches to the irrigated land itself. The settlers, drawn from all parts of the Union, are absorbed into the population of the States where the works are located, and will become, in time, the dominant factor in shaping the policies of those commonwealths.

The immediate withdrawal of all land from settlement pending the adoption of the new policy is absolutely essential as a means of preventing its absorption by speculators seeking to forestall the action of the Government and to realize profits from the subsequent sale of the property to actual home-seekers.

The proposed national commission would utilize the knowledge and experience of the three departments already intimately associated with the management of the public domain. It would include the highest engineering talent, as well as expert ability in connection with the problems of water and soil. If it were deemed desirable to

have works constructed under the combined supervision of State and national authorities, as is now being done in the case of *débris* improvements in California, such a commission would be admirably suited to the purpose.

The sum of ten dollars per acre would return to the Government every dollar invested in reservoirs and canals. The provision for a similar charge upon private lands receiving water from public systems is a business precaution essential to the prosperity of the Government's enterprise. A hundred million acres of the most fertile lands in the West were given away as railroad subsidies. These lands are intermingled with those still belonging to the public domain. Hence, it is impracticable to provide water for the one without doing the same great service for the other. Under the proposed measure private landowners will be compelled to sell their cheaply acquired property at very low prices, or to hold it until the public domain is entirely settled. To supply water to private lands on terms which would give it an advantage in the market as compared with the public lands would be a manifest injustice to the nation.

The other provisions of the proposed measure are sufficiently obvious on their face, with the exception of the feature which touches upon local systems of administration. The absolutely vital character of that provision has already been set forth.

The forestry problem of the West is now well on the way to solution. The division of the Department of Agriculture having charge of this subject was raised to the dignity of a bureau under President McKinley, and the most competent person in the United States for the undertaking, Mr. Gifford Pinchot, placed at the head of it. Only a beginning has been made as yet, but the end is clearly foreseen. The wasteful use of public timber will cease, fires will be largely prevented, and a great plan of re-forestation will be gradually put into practice. The question of what to do with the grazing lands is still untouched. So long as they remain a public common they will be a source of endless irritation and a means of injustice to the small settlers of the West. The only remedy thus far proposed is that of leasing them on long terms. To

make such a plan beneficial to the entire community it would be necessary to give all cattle access to springs and water fronts now controlled by individuals and companies. Without such privileges the finest pasture is useless to live stock. But with the irrigation of the tillable lands on the public domain the grazing problem will be forced to some reasonable settlement.

#### THE NATION'S OPPORTUNITY.

To conquer this vast region for civilization is not only the President's opportunity, but the nation's as well. What other single measure of statesmanship ever doubled the productive capacity of the republic at a stroke? What other expenditure of the national treasure ever threw so wide the door of opportunity and of hope to our crowding millions? What other policy of internal improvement ever did for our merchants, manufacturers, and railroads what this will accomplish in extending the home market and creating new demands for transportation? But the material aspect of the matter is neither the greatest nor the most significant in the future life of the American people. History deals but lightly with trade statistics and real-estate valuations. Its chief concern is with men, ideas, and institutions.

In this Western land one hundred millions are to dwell in the midst of such scenery, such climate, and such resources as shall enable them to develop higher forms of civilization than ever existed in the past. Aridity is a blessing. Irrigation is a miracle. The one compels the assertion of man's control over the forces of nature, while the other guarantees him democratic institutions. Here the great coöperative tendencies of the time will come to the fairest fruition. Where the very rains cannot fall to fertilize the earth except through the agency of organized and associated man there will be learned, in time, the lessons in human brotherhood for which the world is waiting. In these Western deserts the seeds of the future lie dormant, awaiting the creative touch of the statesman. To kindle them into life and to make them bloom in deathless beauty for the republic and the world is the peculiar opportunity of President Roosevelt's administration.

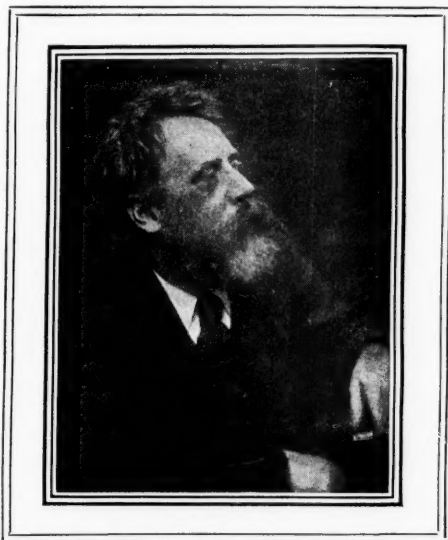




## LEADING ARTICLES OF THE MONTH.

### MR. HENLEY ON "LEWIS" STEVENSON.

THE art of friendship, laments the writer of a brilliant article in *Macmillan*, is decaying, if not dead. "We have no leisure for it." We have acquaintances, and connections formed from interested motives, but no friendships. The writer allows that women have not lost the art so completely as men, and makes the bold demand that friendship—"the most perfect friendship," he calls it—be allowed between man and woman without prejudice to marriage ties. The *Pall Mall Magazine* offers illustrations of two



MR. WILLIAM E. HENLEY.

sorts of friendship. Mr. William Sharp recounts and illustrates the long-standing "literary friendship" between Mr. Swinburne and Mr. Watts-Dunton, who have lived together, for the greater part of each year during twenty-one years, in "The Pines," on Putney Hill. But the "eminent instance" of how friendship can be interpreted is supplied by Mr. W. E. Henley's criticism of his old friend, "Lewis" Stevenson, as he calls him, and of Mr. Balfour's portrait of him.

### STEVENSON AN EGOTIST.

"Why all this crawling astonishment, this voluble admiration?" is an ejaculation concerning the close of Stevenson's life which strikes the key of Mr. Henley's musings. He says:

"As I read I am oppressed by the thought that here is Lewis Stevenson very much as he may well have wanted to be, but that here is not Lewis Stevenson at all. At any rate, here is not the Lewis Stevenson I knew. . . . At bottom, Lewis Stevenson was an excellent fellow. But he was of his essence what the French call *personnel*. He was, that is, incessantly and passionately interested in Stevenson. He could not be in the same room with a mirror but he must invite its confidences every time he passed it; to him there was nothing obvious in time and eternity, and the smallest of his discoveries, his most trivial apprehensions, were all by way of being revelations, and, as revelations, must be thrust upon the world; he was never so much in earnest, never so well pleased (this were he happy or wretched), never so irresistible, as when he wrote about himself."

To this somewhat qualified eulogy is added in the footnote a further qualification:

"Mr. Raleigh notes with a just delight the faultless tact by which these utterances are marked. But here came in the man of letters. The man of talk was neither so convincing nor anything like so discreet."

### NO "SERAPH IN CHOCOLATE."

He continues:

"No better histrion ever lived. . . . Mr. Graham Balfour's estimate. . . . is that of an angel clean from heaven, and I, for my part,



THE LATE ROBERT LOUIS STEVENSON.

flatly refuse to recognize it. Not, if I can help it, shall this faultless, or very nearly faultless, monster go down to after years as the Lewis I knew, and loved, and labored with and for, with all my heart and strength and understanding. . . . I take a view of Stevenson which is my own, and which declines to be concerned with this Seraph in Chocolate, this barley-sugar effigy of a real man."

#### AN AUTOPHOTOGRAPH.

Mr. Henley then does a thing which is often a strain to living friendships and is more rarely done of the dead,—he quotes the man against himself. He says:

"I think he has written himself down in terms that may not be mistaken or improved. 'An unconscious, easy, selfish person,' he remarks, 'shocks less, and is more easily loved, than one who is laboriously and egotistically unselfish. There is at least no fuss about the first; but the other parades his sacrifices, and so sells his favors too dear. Selfishness is calm, a force of nature,—you might say the trees are selfish. But egotism is a piece of vanity; it must always take you into its confidence; it is uneasy, troublesome, searching; it can do good, but not handsomely; it is uglier, because less dignified, than selfishness itself. But here,' he goes on, with that careful candor which he so often has—'here I perhaps exaggerate to myself, because I am the one more than the other, and feel it like a hook in my mouth at every step I take. *Do what I will, this seems to spoil all.*' This, as it seems to me, describes him so exactly that, if you allow for histrionics (no inconsiderable thing, remember!), you need no more description."

Mr. Henley suggests that generosity in giving was not quite the trait predominant in his old friend's character. "To your Anxious Egotist, your trained and cultured Shorter Catechist, what magnificence in the matter of self-approval, self-oblivion, self-righteousness, could come amiss?"

#### THE "CHARMEUR."

Then follow reminders of service rendered by Mr. Henley to Stevenson, and then this reference to his literary work:

"If I craved the enchantment of romance, I ask it of bigger men than he, and of bigger books than his, . . . while if good writing and some other things be in my appetite, are there not Hazlitt and Lamb—to say nothing of Shakespeare. . . . I remember, rather, the unmarried and irresponsible Lewis—the friend, the comrade, the *charmeur*. . . . The impression of his writings disappears,—the impression of himself and of his talk is ever a possession."

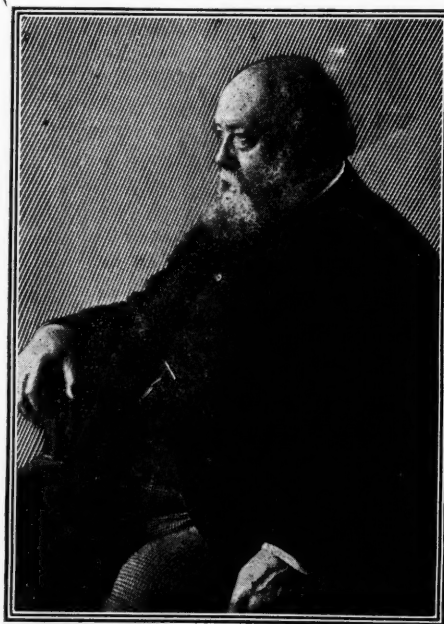
#### "NO REASON FOR MAKING HIM A HERO."

The admirers of Stevenson will perhaps find it hardest to forgive Mr. Henley's "last word."

"I have everywhere read that we must praise him now and always for that, being a stricken man, he would live out his life. Are we not all stricken men, and do we not all do that? And why, because he wrote better than any one, should he have praise and fame for doing that which many a poor, consumptive seamstress does,—cheerfully, faithfully, with no eloquent appeals to God, nor so much as a paragraph in the evening papers! That a man writes well at death's door is sure no reason for making him a hero."

#### A CHARACTER SKETCH OF LORD SALISBURY.

"EVERYBODY'S MAGAZINE" for January opens with a character sketch of Lord Salisbury, by T. P. O'Connor, a characteristic piece of work from that lively writer. The article is especially notable for its large and fine illustrations showing the aristocratic and historic home of the Cecils and its surroundings. Mr. O'Connor tells us that Lord Salisbury was in his youth very much like his son, Lord Hugh Cecil, the present member for Greenwich, a tall, pale, thin young man, with profound reverence for the Church of England. It seems to be the family tendency to change in physique as Lord Salisbury must have changed as years came on.



A RECENT PORTRAIT OF LORD SALISBURY.

## THE CECILS OF TEN GENERATIONS AGO.

"We have," wrote Mr. Gladstone, "a prime minister whose ancestors were similarly employed, to the great benefit of England, ten generations ago."

"Perhaps this long descent has not been an entire advantage to Lord Salisbury. The Cecils who founded the family were the ministers of despotic monarchs like Elizabeth and James I.; and Lord Salisbury has never quite got over the opinion that the ideal condition for a minister—especially a foreign minister—is that he should be allowed to work in secret council with a sovereign, and without the distracting and ignorant intervention of representative assemblies and plebeian opinion. There could not be two men more dissimilar in many respects than Lord Salisbury and Prince Bismarck; indeed, one of the sayings quoted against Lord Salisbury constantly is the scornful summing up of his character by the grim chancellor as 'a lath painted like iron.' And yet the two men were very much alike in their inner selves. Bismarck never got over the idea that the government of nations should be in the hands of an aristocrat closeted with a sovereign, and scornful of all modern democratic developments; and that is the secret gospel of Lord Salisbury even to-day, though the progress of democracy has compelled him to hold it in the recesses of his heart."

## THE PRIME MINISTER'S EXTREME SHYNESS.

"Hatfield is just thirty-six miles from London. Whatever the political crisis, you read two or three times a week—sometimes every day—that Lord Salisbury has gone down to Hatfield. During the full season he used to give, occasionally, huge receptions; there are often housefuls of people at Hatfield, and there are great garden parties in the months of July and August; but these are more or less formal and official entertainments, and Lord Salisbury probably hates them. It is significant, too, of his shyness and seclusion that when he is traveling down to Hatfield he gets into a carriage by himself if he can, and if he happens to be unfortunate enough to have some fellow-travelers, he buries his nose in a book and never exchanges a syllable with anybody. Thus it comes to pass that while he has been the foremost figure in England for many years, he is scarcely known to the man in the street. Indeed, he is so little known in general society that a man so prominent as Mr. John Morley has never exchanged a word with him. Probably there are not half a dozen men, outside the members of his cabinet, who have ever had a conversation of any length with him."

## LORD SALISBURY AS A JOURNALIST.

When the present head of the Cecil family was a young man he was a younger brother, who had little idea of getting to the headship of the family, and who had a small, feeble allowance from his father. It is said this allowance became still smaller when the young man married, against his father's wishes, the daughter of Judge Alderson. Mr. O'Connor thinks this was the critical action of Lord Salisbury's life, which made his character and career. Instead of being a mere *dilettante*, he had to work hard for his living. His sister was the wife of Beresford Hope, and young Lord Robert Cecil became one of the darling, brilliant, and highly paid writers on the *Saturday Review*, which Beresford Hope founded about this time. It is due to this journalistic training that Lord Salisbury has a most remarkable facility in writing his official dispatches,—a facility that Mr. O'Connor describes as nearly a fatal gift.

"There was a time when Lord Salisbury's dispatches were little short of a great European peril. Accustomed to put things with the vigor and the irresponsibility of the journalist, with a naturally cynic temper and a love for a sardonic joke, Lord Salisbury in his dispatches walked carelessly among the powder magazines of national passions and susceptibilities."

Mr. O'Connor says that now Lord Salisbury is much more conservative in his dispatches and public utterances, and has, indeed, for many years been regarded as eminently a peace minister. "Indeed, he is constantly pitted against Mr. Chamberlain as an agency for peace, and among the many things which have led up to the disastrous war in South Africa perhaps one of the most important was that, at the most critical moment in the negotiations, Lord Salisbury was paralyzed by anxiety and grief at the deathbed of the wife he so dearly loved."

## AS AN ORATOR.

"Lord Salisbury is one of the few men in English public life who seem to make no preparation for a speech and use no notes. He stands almost straight upright—straight, except for the somewhat heavy stoop of the shoulders; he never looks at his audience; he never raises his voice; but in an even, monotonous, unbroken, low tone,—with something of the detachment of a somnambulist or a dreamer,—he pours forth his views of the subject at issue. The language is always choice, lofty, original; and here and there you catch a phrase which has that sardonic humor which is never absent from any prolonged effort on the part of Lord Salisbury." Mr.

O'Connor says it is curious that the prime minister rarely makes a speech without committing some glaring indiscretion, and that his party has got used to explaining away offensive sentences by their chief.

#### LADY SALISBURY.

The house of Cecil's extreme reserve has been pretty successful in keeping family matters from the public, but the prime minister's household is known to be equipped with all the domestic virtues. Lady Salisbury was the most remarkable of women, as brilliant in her own way as her husband. Mr. O'Connor says she had the reputation of having the worst manners of any woman in London, but was really a very good woman, and especially so to other women.

"Lord Salisbury, when he does entertain, does so with the lavish and dignified hospitality of a grand seigneur. There is only one thing wanting to the perfect comfort of his guests, and that is the difficulty of a comfortable smoke in the house of a man whose hatred of smoking amounts almost to a physical malady. On the other hand, in Hatfield the visitor finds a curious combination of all that is ancient and all that is modern. Relics of the old England everywhere abound; but, on the other hand, the Marquis of Salisbury takes a keen interest in science, and is an electrician of no mean dexterity. Some of the ingenious contrivances for the electric lighting of the ancient house are due to his own invention."

#### THE PRIME MINISTER'S ILL-HEALTH.

"The last few years of Lord Salisbury's life have not been as prosperous as those which preceded them. He has lost his wife; and to a large extent he has lost his grip both of his party and of his country. He has tried by the use of a tricycle to get rid of the ill-health that comes to a man of sedentary habits and of large bulk, but with, apparently, little success. It would be impossible to expect from a man who has passed threescore, and who is more than twenty stone weight, the activity, either of mind or body or resolution, which are required at a moment when a nation is passing through a crisis of such magnitude as the South African war. Lord Salisbury, with that shy dislike of new faces which is natural to a man of his character and of his years, declined, when he had the chance, to admit new men into his cabinet, and stuffed it with his relations; and this has disappointed and soured a good many of his old supporters. The position of Lord Salisbury in the public life of his country is a little like the physical position he occupies in the House of Lords.

The moment you enter that assembly, your eye is attracted by the huge figure—the large body, the massive brow, the great head. Lord Salisbury is unto the other ministers as the Matterhorn to the smaller mountains that rise around it,—he is in the House of Lords and among these colleagues, but not of them. And so, with all his wonderful position, his tremendous prominence, his towering personality, he seems, in the life of England and among his countrymen, detached, lonely, somber."

#### PRESIDENT ROOSEVELT'S COLLEGE DAYS.

IF Rutherford B. Hayes be counted as a Harvard man on his degree of L.L.B., received in 1845, Theodore Roosevelt is the fourth Harvard graduate who has been President of the United States. The first two were John Adams, Class of 1755, and John Quincy Adams, Class of 1786. The accession of "Roosevelt, '80," to the Presidency puts Harvard at the head of the list of colleges that have furnished Presidents; but the ancient College of William and Mary, in Virginia, is a close second, with her three graduates in the White House—Jefferson, Monroe, and Tyler.

These and many other interesting facts are set forth in an article contributed to the *Harvard Graduate's Magazine* for December by Mr. Curtis Guild, Jr., of the Harvard Class of 1881, on "Theodore Roosevelt at Harvard." Notwithstanding the great differences between the Harvard of Roosevelt's time and the Harvard of to-day, there was much in the college life of those days that has its counterpart at the present time. It may surprise some of the athletes among the President's admirers to be told that neither Roosevelt nor his class contributed in any very marked degree to the glory of his college in sports. There was one baseball record in Eighty's time of Brown 21, Harvard 5! In athletics, Mr. Guild says that Roosevelt, though an enthusiastic supporter of the college teams, did not especially shine.

"He was always a keen hand for exercise, but he was not naturally muscular, and the terrible handicap of his near-sighted eyes might well have checked another man. He was always, however, a most earnest devotee of sparring, though he risked his eyesight with every bout. He sparred with a pair of large glasses literally lashed to his head. The only occasion when he ever entered a public match was in the spring of his junior year. He defeated W. W. Coolidge, but was himself defeated in the final by C. S. Hanks. As Hanks good-naturedly said himself, a lucky blow of his that knocked off Roosevelt's



glasses settled the matter. Roosevelt was an attacker always, and sought to offset his fatally weak point by leading swiftly and heavily himself without waiting for attack. He was a lightweight physically, his weight at the contest mentioned being but 135 pounds."

#### THE FUTURE PRESIDENT'S COLLEGE POPULARITY.

Socially, says Mr. Guild, young Roosevelt was not merely one of the most popular men of his class, but one of the most popular men of his time in college.

"The sturdiness of his opinions appears in the table of the church membership of the classes, in which 'Dutch Reformed Church . . . I' appears under the heading '80 after a long series of ciphers against membership in that communion in preceding classes. His hearty good-fellowship is attested by his membership in the *A. A. P.*, the Art Club, D. K. E., Hasty Pudding Club—of which he was secretary and fifth man elected—Institute of 1770, and Porcellian Club. He was even a member of the Glee Club; but lest any who were in their day rejected for lack of tuneful voices—'sore-headed nightingales,' they called us—should, having heard the President attempt to warble at his leisure, feel hurt that such singing could ever be glorified, let me hasten to add that he was an associate, not an active, member of the Glee Club. One of the six men mentioned for second marshal of his class, he was finally elected a member of the class-day committee, and a most effective member he was."

#### A GREAT READER.

Roosevelt's literary ability was known by his classmates, but it was seldom displayed in college. He was an enthusiast in the study of natural history, and spent hours in work at the museum which counted nothing on his college standing. But what chiefly distinguished him among his classmates was his incessant reading habit. Mr. Guild says that Roosevelt had an "enormous thirst" for reading.

"Western politicians were sometimes surprised, in the stumping tour of Roosevelt in 1900, to find the candidate for Vice-President resting from the terrible strain by an odd half-hour with reviews, and books of which Plutarch's 'Lives' was the lightest. This custom was not a temporary practice, but an ingrained habit. No man ever came to Harvard more serious in his purpose to secure there, first of all, an education. He was forever at it, and probably no man of his time read more extensively or deeply, especially in directions that did not count on the honor list or marking-sheet. He had the happy power of abstraction, and nothing was more common

than a noisy roomful of college mates with Roosevelt frowning with intense absorption over a book in the corner. He did not read for examinations, but for information."

Perhaps a man of the Roosevelt type was needed to teach the Harvard students of his time that a manly man, as Mr. Guild puts it, "might be serious in purpose in his college days without becoming a prig."

#### A LEADER OF COLLEGE OPINION.

President Roosevelt's influence on Harvard public opinion is summarized in the concluding paragraph of Mr. Guild's article:

"An aristocrat in the best sense, cowardice, meanness, and falsehood were simply impossible to him. A democrat in the best sense, he recognized the duty of the fellowship and brotherhood of all sons of Harvard in days when such obligations were less insisted upon than in these halcyon days of the Harvard Union and the Soldier's Field. He was a student, but not a rank-seeker; an athlete, but not a cup-winner. Careless as to-day in the cut of his clothes, he was clean-cut as now in thought and speech. The pulse of public spirit beat high in him then as it does to-day, and if his name ever came among the first for well-nigh every college club and association, it was not because of his father's name or his family's fortune, but because his own name helped wherever it was found. Brave to rashness, strong in his convictions, preferring honor and failure to accommodation and success,—these were the traits we knew and respected and loved. The popular man at Harvard is not always popular in after years. The leader of the freshman year often becomes the camp-follower among the seniors. Roosevelt's hold upon his fellows did not lessen; it grew, and the growth has steadily broadened, till the leader of class opinion at Harvard has become the leader of public opinion in his country."

#### ALFRED KRUPP, THE GREAT GERMAN IRONMASTER.

IN view of the fact that our country is generally considered to be the one offering the widest field to the "self-made" man, it is interesting to note what pluck and perseverance may accomplish in a country where the opportunities are thought to be more limited. The career of Alfred Krupp, the German steel magnate, as briefly outlined by Richard Ehrenberg in his article on "The Making and Significance of Great Fortunes," in the *Deutsche Rundschau* for November, presents a striking instance of the rise of a poor boy from obscurity to the position of one of the world's leading manufacturers, and at his

death, July 18, 1887, one of the most wealthy men in Germany.

At the age of fourteen, young Krupp was called from school by his widowed mother to take charge of the small steel foundry at Essen in which his late father had sunk a fortune without realizing any returns. The boy had neither capital nor credit to start with, and only four workmen with whom to continue the business. As Krupp says, in a retrospect uttered fifty years later, "I started with a few men, who earned more and lived better than I did. Thus I continued for nearly twenty-five years of care and toil, and even after I began to employ a larger number of men my fortune still was less than that of many a man working to-day in my factories." At that time, in 1826, Essen was a small town of only about four thousand inhabitants; to-day, it numbers 100,000, of whom, in 1898, 22 per cent. were employed in the Krupp works. To-day, about forty-six thousand men altogether are employed in the various establishments of the concern in Essen, Buckau, Kiel, etc., so that, including their families, more than one hundred thousand people are supported by Krupp.

#### KRUPP'S SPECIALTY.

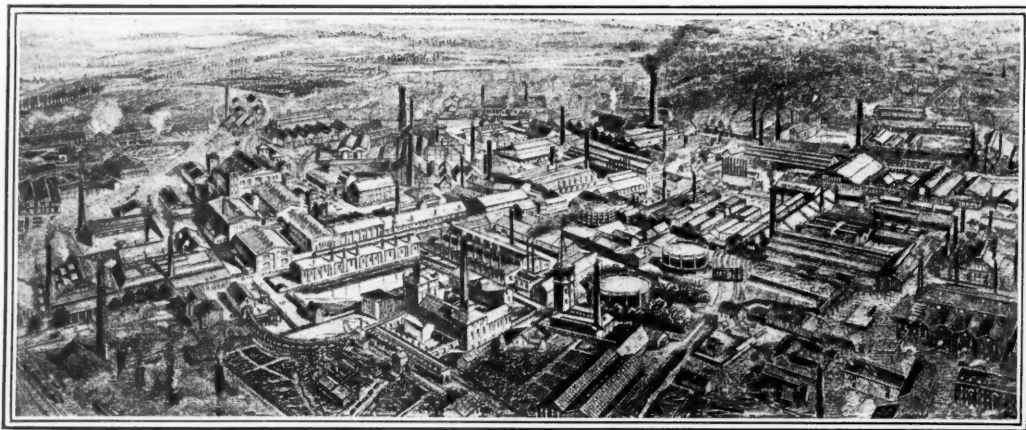
Following at first in the footsteps of his father, and thereby gaining his experience, Krupp gradually perfected inventions of his own, beginning in 1847 to turn his attention chiefly to the manufacture of guns from cast steel. Cast iron and brass had been the materials employed for centuries, although not adequate. Krupp, firmly convinced of the superiority of the steel produced in his foundry, untiringly experimented, and he vainly tried to induce the Prussian Government to introduce his guns. His first orders came from elsewhere, — from France, and from the

Khedive of Egypt. The then prince regent, the later Emperor William I., finally decided in favor of the Krupp guns, in 1859, ordering three hundred for the Prussian army. This ended the period of Krupp's trials; but not until the Franco-Prussian War, during which not one of the guns furnished by Krupp exploded, was his invention vindicated.

#### COMMERCIAL IDEALISM.

Krupp's ideal was to produce from the best raw material goods, and especially guns, of the utmost possible perfection. The profit to him was merely secondary. In his youth and later, he never hesitated at sacrifices in order to follow up his inventions. This idealism was of far-reaching consequences, influencing his whole attitude toward his plant and his men. All the surplus earnings went to the enlarging of the works, and the men were organized under an almost monarchical system of government, each one carefully trained for his especial post, and made conscious of being an integral, necessary, part of the concern. Important positions were filled by the best men available, but Krupp always remained director-in-chief.

"As a matter of fact," says Ehrenberg, "to the end of his life he worked during the sleepless hours of the night. By his bedside lay writing paper, with immense pencils. In the morning, the sheets containing his questions, orders, encouragements, explanations, written in large, characteristic letters, were sent to the factory. He often added diagrams, which he quickly and skillfully executed. But he also frequently came to the works to see personally how some order was executed. He knew by sight those of his men who had been employed for a length of time in the factory."



THE KRUPP STEEL WORKS AT ESSEN.

## RELATIONS WITH HIS EMPLOYEES.

In return for the implicit obedience and attention to duty which Krupp demanded from his employees, he was solicitous for their welfare even at a period when other employers thought that the prompt payment of wages discharged them from all further responsibility toward their workmen. As early as 1853, he instituted a sick fund, and eight years later he began to interest himself in the housing of his men. At present there are about four thousand working men's homes belonging to the plant, to be had at lower rentals than found anywhere else. There are, furthermore, a coöperative store, selling goods at retail and dividing the profits among the consumers; pension funds for the workmen, their widows and orphans, and for the higher officials; funds for working men's homes; baths, etc.; a savings-bank; domestic and other schools, etc. In 1897, the firm spent for such purposes about one million three hundred and sixty thousand marks. Krupp's own simple, unostentatious way of living also contributed to the good understanding between employer and employees. He was not only their master, but also their friend and counselor in difficulties. Strikes are unknown among the Krupp men.

Krupp had no sympathies whatever with the German Social Democracy. He warned his men against it, and immediately discharged any sympathizers. The article closes with some most interesting extracts from Krupp's utterances, too long for quotation, condemnatory of the movement, and containing his opinions on the relation of capital to labor. Knowing that the success of his great undertaking was due chiefly to his own efforts, he held that the rewards rightfully belonged to him.

## CHIEF ARTHUR, OF THE LOCOMOTIVE ENGINEERS.

IN *Frank Leslie's* for January there is a character sketch of "Chief Arthur," the now famous head of the Brotherhood of Locomotive Engineers, written by W. R. Merrick. Mr. Merrick points to the fact that Chief Arthur is the only labor leader out of a score prominent twenty-five years ago who has maintained his prestige. Other unions and other leaders have disappeared with a rapidity that gives the pessimist among the working men the right to shake his head at the associations and federations that succeed each other in bewildering succession. The Brotherhood of Locomotive Engineers was ten years old when, in 1873, P. M. Arthur was elected its chief. Although the names of Arthur and of his association are now synonyms for

From *Frank Leslie's Popular Monthly*.

MR. P. M. ARTHUR.

(Chief of the Brotherhood of Locomotive Engineers.)

conservatism, he was originally elected by the war party of the brotherhood, and for the first ten years was constantly engaged in leading his men through one bitter strike after another.

Mr. Merrick describes the celebrated chief as follows:

"A kindly, modest old gentleman, with ruddy face, framed in white hair and the white chin whiskers that are naturally associated with the benevolence of grandfatherhood, a frame of generous proportions, as erect as in the days when he peered through the night over a difficult piece of track, his hand on the reversing lever of his engine,—that is Arthur. His eyes are blue and kindly, sparkling with native wit; his mouth broad and sensitive, always ready to expand in a good-natured smile. This is the man whom one expects to see when he thinks of the conservative labor leader who does not strike. This is the man who says:

"Remember always that the burden of a strike falls on the women and children. Our first duty is to them; consult them."

The brotherhood is thought of to-day as the aristocratic labor union, and Chief Arthur as the aristocratic labor leader. He lives in a splendid

mansion on Cleveland's most famous street, Euclid Avenue; he has an ample household, and his wife and daughter are leaders of the fashionable society of Cleveland.

As a railroad man, Arthur worked his way from the very lowest round, but always had a reputation for knowing more than the man ahead of him. When, in 1873, the Brotherhood of Locomotive Engineers was brought face to face with the Pennsylvania Railroad in a disagreement, Chief Wilson hesitated to bring matters to an issue, and Arthur was elected, to remain chief ever since. One strike after another followed in quick succession, and in 1877 Arthur won five strikes in six months from the then strongest and biggest railroad systems in the country.

#### A RECORD OF STRIKES WITHOUT VIOLENCE.

"In all of the succession of strikes carried on at that time there is but one case on record of violence being used. Columns were devoted to this single instance of some angry engineers who thrashed a man for taking the place of one of them and then refusing to accept double pay at their hands, with the promise of a steady job, if he would quit. There is a world of contrast between this single instance of force employed during a dozen strikes, when to-day there is little excitement created in a similar case unless a score of men are mobbed at once, and the officials in the district where the strike of to-day takes place are thankful if no dynamite is used and open war does not make the calling out of several regiments necessary. The fact that the engineers at that time used money freely in an effort to bribe the men who had taken their places was spoken of as an outrage, and the offer of \$1,500 to one of the 'scabs' on the Boston & Maine road was mentioned with bated breath.

" 'We have the right to persuade and the right to hire,' Arthur said, not long ago, when discussing this subject, conducting strikes. 'We have these rights and no others.' "

#### RECIPROCITY AND FOREIGN TRADE.

LARGELY because of the prominence given to the subject in President McKinley's last speech at Buffalo, the question of trade reciprocity with foreign countries is constantly under discussion. The treaties negotiated by the Hon. John A. Kasson, and now before the Senate, are favored by some commercial bodies in this country, but condemned by a considerable part of the press. Among those writers who oppose these commercial treaties, Mr. E. J. Gibson has devoted special attention to the agreement negotiated with France and now awaiting the action of the

Senate. Of Mr. Gibson's conclusions, which are presented in the December *Forum*, the following statements are especially pertinent :

#### WOULD FRANCE MAKE A TARIFF WAR AGAINST US?

"If we take as our basis the trade of 1897, we find that the loss of revenue the United States would sustain under the French treaty would amount to about \$1,000,000, while on the same basis the French, according to Mr. Kasson, would lose less than \$300,000. But the French negotiator declared that if the treaty were not ratified petroleum and cotton-seed oil would be taken off the minimum tariff and subjected to the maximum tariff rates, which, if taken into consideration, would make the French loss about \$5,000,000. The question is: Shall the United States be forced into a treaty by such threats? No discrimination whatever is made by us against any foreign nation; and yet we are directly and avowedly discriminated against by France, Germany, and some other countries.

"France sells to the United States a great deal more than she buys in return; hence, any talk of her making a tariff war against this country is absurd. In the fiscal year of 1901, according to the Treasury statistics, the imports from France were \$75,454,098, and the exports to that country \$78,923,914. But, owing to our faulty system of statistics, about \$15,000,000 of exports to Switzerland are counted as exports to France. For instance, our figures show imports from Switzerland in 1900 of \$17,393,268, and exports of \$250,477, in value. That on the face of it is absurd. As a matter of fact, as shown by the official returns of Switzerland, that country imports from the United States nearly as much as it exports to this country. But, under our statistical system, exports are counted as going to the country where they are landed; and as nearly all our exports to Switzerland go through France, they appear in our statistics as exports to France. Hence, when we deduct the exports to Switzerland, as shown by the official returns of that country, from the total of the exports to France, the French imports from the United States are reduced to about \$63,000,000, as compared with our imports from France of over \$75,000,000, leaving a balance in favor of France of about \$12,000,000.

"That shows the folly of French threats of 'retaliation,' which mean more discrimination. There is a provision in our statutes which authorizes the President, when satisfied that unjust discriminations are made by any foreign state against any product of the United States, to retaliate by excluding from the United States such products of such foreign state as he may deem



proper, until such discrimination against the United States is removed. A judicious use of that power would probably soon end the discriminations which are made by the French against the United States, and which apply to no other country, and would relieve us of threats of further discriminations."

#### OUR SOUTH AMERICAN TRADE.

Mr. Gibson brings out some interesting facts regarding our trade relations with the South American countries, the sum of which goes to show that we are paying duties to countries whose products are admitted at our ports free, while we depend on foreigners to do our carrying.

"The United States has apparently made a mistake in putting coffee and some other things on the free list instead of using them for reciprocity purposes. This applies particularly to South America. Of its products imported into the United States, 92 per cent. are admitted free of duty. But of the United States exports to the countries of South America, we pay duty on all. We furnish to those countries 15 per cent. of their imports, and purchase of them 30 per cent. of their exports; showing, in their case, that buying from a country does not result in return sales. In ten years we sold to the countries south of us \$904,000,000, while we bought of them \$2,135,000,000. In thirty years we purchased of Brazil \$1,500,000,000 worth of her products, and only sold to her about \$250,000,000 worth of our products, which compelled us to pay the enormous sum of \$1,250,000,000 in gold or its equivalent to settle the balance of trade. Nearly every cent of that sum has gone into the pockets of European merchants and manufacturers. The exchange alone charged by the London bankers on this business, as reported by a Congressional committee, aggregated at least \$10,000,000, and we paid to owners of English ships \$30,000,000 in the same transaction. And yet Brazil to-day discriminates against us. She charges a higher duty on flour, for instance, when it comes from the United States than when it comes from the Argentine Republic. She does this in return for a reduction of duties by the Argentine Republic on Brazilian coffee, whereas we admit that coffee free of duty, and in the last fiscal year imported from Brazil \$70,643,347 in value of her products, while the Argentine Republic did not take \$4,000,000 worth. This illustrates how the United States has thrown away opportunities for reciprocal trade by putting an article like coffee on the free list and then submitting to unjust discrimination on the part of such a country as Brazil, from which we import nearly six times as much as we export to her.

"One great obstacle in the way of the extension of our commerce is our lack of steamship facilities. Much of our trade with South America is done by way of Europe. The United States has not a single line of steamships running to the River Plate, although, as the United States minister at Buenos Ayres reports, there are 'numberless lines of European steamships running to and from the River Plate.' He relates how trade has to be carried on with the United States by way of Europe, and shows how impossible it is for it to grow much under such conditions. And the River Plate is not alone in this respect. Without direct and frequent steamship communication, trade cannot be successfully conducted with any country; and as long as we continue to depend on foreigners to do our ocean-carrying trade our exports to South America and many other countries will remain of comparatively small importance, and reciprocity treaties will not help us much."

#### Results of Former Reciprocity Experiments.

*Gunton's Magazine* for December sums up the results of previous reciprocity experiments made by the United States with different countries as follows:

"We have had several experiments with reciprocity treaties, covering the greater part of the period since 1856, and in a majority of instances the result has been to increase our imports to a very much greater extent than our exports. Comparing the exports in the last year before the treaty with the last year under the treaty, we find, for instance, that under our treaty with Germany, 1892-94, our annual exports to that country diminished \$438,293, whereas, after the treaty was discontinued, 1895-98, our annual exports increased \$62,986,219, and under the treaty of 1900 to the present time they have only increased \$36,008,248. Under the treaty with Austria-Hungary, 1892-94, our annual exports fell off \$783,574, while during the three years after the treaty, 1895-98, they increased \$3,572,140. During the three years preceding our treaty with Canada our annual exports to that country increased \$20,572,442. During the three years under the treaty, our exports fell off \$718,497, and our annual imports from Canada increased \$39,349,187. During the three years after the treaty, our annual exports to Canada again increased \$1,668,573.

"If we take all the treaties together that we have made since 1850, and compare the exports under the treaties with the exports to the same countries for the same period before the treaties, we find that instead of the exports being increased by the treaties, they were less under the

treaties than before the treaties were made. The increase under the treaties was \$80,823,553, whereas the increase of exports to the same countries during an equal period just before the treaties was \$156,771,642. In other words, our exports increased nearly twice as fast before we had the treaties as they did under the treaties. And this takes no account of the normal increase of trade, which should have shown a greater export trade during the treaty period than the years preceding.

"It is quite clear from our reciprocity experience that the industrial progress of this country is not due to the reciprocity bargains we have made extending the free list to other countries, but to the preservation of our home market for our domestic industries. And we shall do well to ponder carefully and move slowly toward any proposition to swap American markets for foreign markets by such arrangements, and, above all, to be lured into the undermining of our protective system under the guise and in the name of reciprocity."

#### The Argument for the French Treaty.

Mr. John Ball Osborne, secretary of the Reciprocity Commission, writing in the *Atlantic Monthly* for December, disposes of the objections to the French agreement by the following statement:

"The reciprocity treaty with France is opposed because it provides for the reduction of the present average *ad valorem* duty on French cotton knit goods from 64.2 per cent. to 51.5 per cent.; on imitation jewelry, from 60 per cent. to 57 per cent.; on spectacles, from 79.8 per cent. to 71.8 per cent.; and on perfumes, from 67.7 per cent. to 61 per cent. There are a few other protesting industries,—certain manufacturers of brushes, tiles, braids, and gas and electric fixtures,—and that is the extent of the opposition. The great majority of American producers are emphatically in favor of the adoption of the treaty.

"If the concessional rates above mentioned are compared with the corresponding duties of the McKinley tariff, which was enacted at a period when the industries in question were in greater need of governmental assistance, it will be seen that the French treaty in no way menaces the principle of protection. For example, the treaty would leave the duty on imitation jewelry at 57 per cent. *ad valorem*, although under the McKinley law it was only 50 per cent. *ad valorem*. The American negotiator confined the United States concessions in duty to 126 of the 463 numbers comprising the dutiable list of the Dingley tariff, although absolutely unrestricted in this

respect by Section 4; and although authorized to concede in every instance a remission of 20 per cent. of the duty, he granted the full reduction on only eight articles of French merchandise. The average of all the reductions proposed on the part of the United States is actually only 6.8 per cent., notwithstanding it might have been 20 per cent. and still be in perfect conformity with Congressional authorization. Surely this is extremely conservative action on the part of the Executive.

#### WHAT ARE WE GETTING FROM FRANCE?

"On the other hand, the great value of the French concessions to the United States is appreciated only by those American manufacturers who in recent years have attempted to gain a foothold for their surplus products in the markets of France, in competition with the products of English, German, Belgian, and Swiss rivals. The difficulty is that, with the single exception of Portugal, every commercial nation of Europe enjoys in France the benefit of her minimum, or conventional, tariff on imports, while the products of the United States are subjected to payment of the maximum rates of her general tariff. Reduced to an *ad valorem* basis, the difference between the two tariffs, so far as American products are concerned, averages about 48 per cent. (excluding mineral and vegetable oils, 26 per cent.). Many of our manufacturers engaged in foreign trade are effectually barred from the French market by this discrimination in rates, and those who have managed to effect an entrance are contending under difficulties.

"But the reciprocity treaty of 1899, in a single clause, sweeps away this formidable obstacle to the expansion of our trade in France, and, during the conventional term of five years, establishes conditions of absolute security for our commercial interests there. France agrees, in Article I. of the treaty, that 'all articles of merchandise being the product of the soil or industry of the United States of America exported to France or Algeria (whether shipped directly to a French or Algerian port or arriving by way of an intermediate port) shall be admitted into France and Algeria upon payment only of the minimum rates of duty imposed on the like articles of any other origin; excepting from the provisions of this sweeping grant only nineteen specified articles, which are mostly of little commercial significance. The liberality of this concession has aroused considerable opposition to the treaty in France on the part of the manufacturing and agrarian interests. The political organization is such, however, that the French Government would probably be able to carry the

treaty through the Chamber, as soon as its acceptance by the United States should be assured. But, in any case, the agitation in French industrial circles has made it clear that the United States could not again secure such favorable terms in exchange for no more than has been given in the pending treaty."

### IS CUBA THREATENED WITH BANKRUPTCY?

**A**PROPOS of President Roosevelt's appeal to Congress on behalf of the Cuban sugar planters, the information contained in an article contributed by Mr. Edwin F. Atkins to the *North American Review* for December has special timeliness. The present economic crisis in Cuba has come about, according to this writer, largely as a result of the protective features of the Dingley tariff and of the annexation of Hawaii and Porto Rico. However that may be, the facts of the present situation, as set forth by Mr. Atkins, are certainly most grave. For example:

"The price of New York, duty-paid, centrifugal sugars of 96 per cent. purity, which grade of sugar forms the market standard of cane sugars of the world, has now fallen to the extremely low figure of 3.75 cents. When the duty of 1.68½ cents is deducted, 2.06½ cents remains as the bond value of Cuban sugars in New York, while the same grade of sugars from the Sandwich Islands and Porto Rico, as well as the domestic product of New Orleans, has the duty-paid value of 3.75 cents per pound.

"The bond price of sugars last January was 2.69 cents; consequently, the decline since that time has been five-eighths of a cent per pound.

"The price at which Cuba sold her past crop between January 1 and July 1 averaged 2.44 cents per pound in New York, which showed a decline from the previous year of about a quarter of a cent per pound.

"From the present bond value in New York, 2.06½ cents, must be deducted a tenth of a cent for ocean freights and a quarter of a cent for shipping charges in Cuba, including package, storage, lighterage, shipping commission, etc., so that there remains only 1.71½ cents per pound.

"This figure of 1.71½ cents per pound in United States currency, or its equivalent in Spanish money, is all that the Cuban planter now gets for his sugars, delivered at a port where they are salable; and out of that mentioned sum he must pay the inland transportation to the shipping port. As the duty upon these sugars under the Dingley bill is 1.68½ cents per pound, it amounts upon the present value to just about 100 per cent. upon the planter's price, which is now far below the average cost of production.

"With a declining market for his sugars, the Cuban manufacturer has also had to contend with an advanced cost in his labor. He is now paying for labor double the price paid in the large beet-sugar-producing countries, such as Germany and Austria, double the rates that are paid in Porto Rico, and eight times the rates that are paid in Java, with all of which countries he has to compete in the New York market."

### NO HOPE OF BETTER PRICES.

That the Cuban planters cannot reasonably look for any material improvement in prices is made clear by a consideration of the following facts:

The total world's crop of sugar for the year ending October 1, 1901, was 9,581,000 tons, an increase over the previous year of 1,123,000 tons, an amount far exceeding, it is believed, the increase in consumption. During the year, the visible stocks of sugar nearly doubled, the decline in the New York market being 1½ cents a pound. The estimated increase in the world's crop for the coming year is 800,000 tons.

The beet-sugar countries of Europe are producing in excess of their own needs, and of those of Great Britain. Their surplus crop must either find an outlet in the United States or be added to the world's stock.

Estimating the consumption of the United States for the current year at 2,330,000 tons,—110,000 tons in excess of the consumption for the preceding year,—and the supply of duty-free sugar (Hawaiian, Porto Rican, and Louisiana cane and domestic beet) at 390,000 tons, our requirements of foreign sugar would be only 1,440,000 tons. But the estimated supplies of cane sugar alone, including the products of Cuba, the British West Indies, Santo Domingo, South America (for export), Java, and Egypt, foot up to 2,059,000 tons. In addition to this, we have to reckon with the fact that Europe, principally Germany, sent us last year about 400,000 tons of raw beet sugar.

The bounty system for beet-root sugar prevails not only in Germany, but in Austria, Holland, France, and Russia. How this system affects the market for Cuban sugar is illustrated by Mr. Atkins thus:

"There are left but two important consuming countries in the world—Great Britain and the United States. From the markets of Great Britain, Cuba is excluded by reason of the various bounty systems of Europe, where, to illustrate with Germany as a seller, she has to meet a price which, at present figures, is fully half a cent a pound less than cost of production.

"In the United States market, she has to meet

the same German competition at a price a quarter of a cent a pound below cost of production, and against the domestic production of the United States she is met with a specific duty, which now amounts to 100 per cent. upon present value of the sugar to her planters."

#### NEW VIEWS ON THE MONROE DOCTRINE.

NOTWITHSTANDING Secretary Hay's recent declaration that the Monroe Doctrine is the golden rule of American policy, Mr. Sydney Brooks, an Englishman who has spent some time in America, ventures, in the *Fortnightly Review* for December, to describe the doctrine as merely one of those abstractions which arise from "the virtual surrender by the educated classes (in America) of their functions of criticism and leadership." The Monroe Doctrine is merely a "craze," and the unanimity with which it is accepted arises merely from the fact that, having been elevated to a religion, it would be regarded as blasphemous to doubt its truth. It arises from American ignorance of high politics; it has never been debated, and the national verdict in its favor has gone by default. In this respect the Monroe Doctrine differs from Pan-Germanism and Pan-Slavism, which have plenty of opponents in their respective countries. Every American, whatever party he may belong to, is primarily a Monroeist.

#### THE HOLY ALLIANCE STILL ALIVE.

What is the cause of this? According to Mr. Brooks, it is because Americans are never really convinced that George III. is dead. They still believe that the spirit of that king's time, the spirit which lasted till the break-up of the Holy Alliance, is still dominant in Europe. Every monarchical country, in their opinion, is still a despotism, and Mr. Olney practically declared that the most backward South American state represented a higher type of civilization and liberty than England or Germany. All this would not matter much if it were not for the practical difficulties of the doctrine. The first is that it condemns a whole continent to anarchy and backwardness. It practically gives *carte blanche* to the South American states to behave as they like toward Europe, and it prevents the utilization of the country by races which might turn it to account.

#### SOUTH AMERICA NO POSSIBLE DANGER TO THE UNITED STATES.

But suppose it were abolished by consent. In that case, says Mr. Brooks, it is absurd to suppose that the acquisition of South American territory by European states would be a danger to

the United States. No American regards Canada and the West Indies, which are held by European powers, as a menace; and if Germany were to acquire a portion of Brazil three thousand miles from American territory, America would not be any weaker. Indeed, Monroeism means militarism, and it is the result of the Monroe Doctrine that America has wakened up to the fact that she needs more troops and a larger fleet. For she will inevitably have to fight for the preservation of the doctrine. The Monroe Doctrine, in short, has never been of any use to America, and even the expulsion of the French from Mexico took place without it being invoked.

#### An American's Scheme of Modification.

In the *North American Review* for December, Mr. Walter Wellman freely admits that conditions have greatly changed since Monroe's time, and that the United States has no special interest in large portions of South America greater than that of other powers. As applied to the whole hemisphere, Mr. Wellman regards the Monroe Doctrine as a form of resistance to progress. There is, however, a vital principle in the doctrine that must be preserved.

"To make sure of preserving it," says Mr. Wellman, "where its preservation is all-important to the United States, we should no longer seek to apply it where it is inapplicable, where we have nothing to gain by applying it, and where our enforcement of it may at any time be challenged, with the challenger in the right and us in the wrong. The doctrine should be modified so that hereafter it shall apply to a region where it shall be defensible in reason and right. Such a region is found in the West Indies, in the Caribbean Sea, and on the American isthmus. Here the United States has the most important interests, everywhere recognized as vastly superior to those of other nations, due to God's arrangement of the lands and the waters, and to our determination to meet the world's need of a ship canal connecting the two great oceans. Through this region passes the great future line of east and west communication, with the canal in the center, our West Indian possessions on one flank, and Hawaii and the Philippines on the other. Were the United States to confine its policy of exclusiveness to this field, it would be within its obvious and natural rights. Not only would the powers be willing to recognize our exclusive attitude as to this region, but they would be more prone to accept our general, though modified, claim to primacy throughout the hemisphere, and to make all proper concessions to the sensibilities and interests of their most powerful neighbor in whatever enterprise



circumstances and the natural flux of conditions might involve them in the western world."

The United States, in Mr. Wellman's opinion, should still reserve the right to refuse its assent to any political changes in either of these continents, "weighing the conditions with due regard to its own interests, the rights of the European governments which may be involved, and the welfare and happiness of the American peoples most directly concerned." The United States cannot assent, under any circumstances, to the acquisition by any European or Asiatic power of isthmian or Caribbean territory.

#### THE MANUFACTURERS' ARGUMENT FOR SHIP SUBSIDIES.

THE example of England and Germany as subsidizers of steamships is cited by American advocates of a subsidy policy, especially in considering America's trade prospects in the far East. The advantage enjoyed by the English and German manufacturers as a result of shipping subsidies is set forth by Capt. Arthur McGray in the December number of the *National Magazine*. This writer says:

"English and German goods go forward by fast subsidized steamers, which are only fast because they are subsidized. American goods are shipped by slow tramp vessels, and pay higher freight rates, by about \$2 per ton, than English or German goods. For instance, the present rate of freight from New York to Liverpool is \$2 per ton, and the rate from Liverpool to Sydney, N. S. W., is \$5.25; but on through bills of lading from New York to Sydney *via* Liverpool the rate is \$6.75. The tramp steamers sailing direct from New York—and practically all of these fly foreign flags—make their Australian freight rate \$6.75 per ton, to correspond with the through rate *via* Liverpool; therefore, no advantage is secured in shipping by this direct service; but while fast boats would carry the goods across the Atlantic, and still other fast boats take them to the East, the question of transshipment at a foreign port must be considered; and unless close connections are made at Liverpool with steamers for the East, there is from one to three weeks' delay at that port; consequently, American manufacturers are handicapped to the extent of \$2 per ton on freight and from two to three weeks longer in delivery, and as time of delivery must always bear a close relationship to time of payment, the English and German manufacturers who cater to Oriental trade average better terms of settlement, by thirty to sixty days, than do their American competitors.

"The long railway haul from the middle West

to either coast has also a most important bearing on the price of goods manufactured for export. In neither Germany nor England is a long railway haul possible, for neither country is large enough to admit of this."

#### BETTER TERMS TO EASTERN MERCHANTS.

Captain McGray is convinced of the benefits to be derived by American commerce from an isthmian canal, and predicts that freight charges from our Atlantic seaboard to the far East will drop to the minimum on the completion of that work. We shall need a ship subsidy, however, to secure fast ships, just as Germany, some years ago, could get no fast ships until she subsidized them.

With the canal dug and a subsidy policy inaugurated, Captain McGray shows that the American manufacturer will be enabled to quote more acceptable terms to the far Eastern merchant than at present, without increasing the running time of drafts.

"For example: Under present conditions, a manufacturer in the middle West ships an order of goods to Melbourne, Australia, draft being made at ninety days date, which is about as good terms as any manufacturer can give, especially when extreme discounts are necessary to securing the order at all. Then there is the long railway haul to Atlantic shipping ports, irregular steamship sailings, and from three to ten or twelve days are lost before the goods actually leave New York; about sixty days more to Brisbane, two days more to Sydney, and four more to Melbourne, with at least one day's delay at each port. Finally, the goods reach destination in from eighty-five to one hundred days from date of shipment. The draft is now due, or has been paid. In our domestic trade, if merchants were obliged to pay drafts in advance of delivery of goods, there would be a great falling off in the number of merchants.

"We will now suppose this shipment to be made after a subsidy law and the isthmian canal are in operation. Regular sailings would be made, consequently goods would be shipped and draft made at latest possible date to insure connections at the seaboard, and in twenty-five days more, or thirty days in all, the goods would be delivered at Melbourne.

"This means that if the manufacturers made drafts at sixty days they would be paid thirty days earlier than under present conditions, while the Melbourne merchant would have his goods on sale for thirty days before maturity of draft. I need scarcely ask which of these is the better financial proposition, or which condition is best calculated to stimulate trade. Thus, it will be

seen that the power of quick delivery cuts more ways than one. Barren markets cannot exist, and fluctuations in prices must reach the minimum under these conditions, while the advantage in financing is apparent beyond any question."

#### PRIVATE PROPERTY AT SEA.

ON land, the private property of enemies is considered exempt from capture; on the sea, it is still fair prize. Among recent writers on the law of nations, however, there are not a few who condemn the practice. The United States Government proposed to the powers at the Hague Conference, in 1899, the abolition of the capture of private property at sea. The proposal was seconded by the representatives of Holland, but it was decided that the question should go over for future consideration. The whole subject is ably treated in an article contributed by Mr. James G. Whiteley to the December *Forum*.

#### DESTRUCTION OF COMMERCE PROFITS NEITHER PARTY.

Mr. Whiteley attempts no purely academic discussion of the rights and wrongs of the matter, but rather addresses his argument to practical men, showing how the custom was developed in the past and why its continuance under modern conditions is inexpedient and can only result disastrously to the nations engaging in it. He says:

"Under this custom, the commerce of both belligerent nations suffers. Ruin is brought upon hundreds of merchants on both sides, commerce is destroyed, the inhabitants of both countries are beggared by war prices—and to what end? It does not shorten the war or contribute materially to the victory. 'If we look at the example of former periods,' said Lord Palmerston, 'we shall not find that any powerful country was ever vanquished by losses sustained by individuals.' Even the destruction of an enemy's commerce without damage to our own profits nothing; for our modern theory of economics has demonstrated that a nation is made more prosperous by the prosperity of its neighbors, and that the impoverishment of one country brings financial depression upon others, even upon rivals and enemies. This truth is made the more evident as the peoples of the earth are drawn closer together by trade, by improvement in navigation, and by the cable. Demoralization in the financial center of one country is quickly felt in the financial centers of the other nations. The markets of the world are dependent upon each other. We have been taught to love our enemies, although we have not often put the precept into practice; we

must now learn that a care for their material welfare is good policy as well as good morals.

"Thus, it may be seen that it would not be advantageous for a nation to destroy the property of an enemy's merchants, even if it could completely defend its own commerce. But no nation is powerful enough to guarantee complete immunity to its sea trade. The commerce of both belligerents must suffer, so that each sustains a double damage,—a direct loss in its own commerce, in addition to an indirect loss through the needless impoverishment of the merchants of the enemy. The present international custom permitting seizure of private property at sea is a direct menace to the prosperity of every shipowner and of every merchant who ships his goods abroad. It is harmful financially and useless politically. Under different circumstances of life and of trade, it was perhaps a useful instrument; but it is now out of date, and, like an ancient cannon, is as dangerous to those who attempt to make use of it as to those against whom it is directed. Commerce has at times made protests against this sword of Damocles above its head; but commerce has not yet lifted its voice in imperious demand, as its importance would justify it in doing.

#### COMMERCIAL PEACE ALWAYS PRACTICAL.

"One cause of this apparent indifference on the part of shipowners is that, while they see that the law of seizure is ruinous to their own individual interests, they have a vague idea that for some occult reason the law is necessary to the state for political purposes. This idea is erroneous. The law of seizure serves no good purpose in the state. On the contrary, it is most pernicious in that it tends to destroy the commerce and wealth which uphold the state. Again, this apathy arises partly from the fact that seizure is a danger which has menaced commerce for so many centuries that merchants have come to look upon it as a natural phenomenon which could be no more avoided than the tempests of the sea. Thus, we find in bills of lading 'the acts of God and of the King's enemies' joined together in the same category. The idea of a commercial peace coexisting with a political war is so novel that it has not impressed itself upon men's minds as a practical thing. It seems, at first thought, fantastic and chimerical; but upon examination it will be found that the idea is eminently practical. It is, indeed, the only practical system, for the present authorized destruction of private property is an impractical and useless waste."

Mr. Whiteley recognizes the fact that the reform cannot be accomplished by theorists alone. If commerce demands it, governments will take it up.

"The world has become familiar with the principle of immunity. Governments have actually put it into practice, and have seen that it is good. Commerce has increased in size and in importance, and its future development requires the reform. Not only have the governments and the people become prepared to receive the new principle, but commerce has become powerful enough to demand it. What is needed now is united effort on the part of shipowners, as well as boards of trade and similar bodies, in each nation."

Mr. Whiteley is about to take steps with a view to forming an international committee to secure the joint action of commercial bodies in petitioning for the consent of the powers to a new law making exempt from capture all private property at sea, in time of war as in time of peace. He appeals for assistance to shipowners, merchants, and others directly and materially interested in the proposed reform.

#### HOW ENGLAND IS BEING LEFT BEHIND.

MR. POULTNEY BIGELOW, writing, in mid-November, to *Die Nation*, of Berlin, on the question "Is England Declining?" says:

"The English appear to have quite forgotten how to accommodate themselves to the demands of modern times. They are forever writing leading articles about German and American competition, but they shut their eyes to the fact that their chief competitors have learned to do better what is done badly in England." One of the examples chosen by the writer is the railway service, "a British specialty." England, he states, "has to-day the costliest, the slowest, and the dirtiest railway system of any civilized country in the world. America is far ahead of her in every respect, and even in Germany and France one travels more quickly, more cheaply, and in cleaner carriages."

"Matters are no better with regard to the passenger steamers belonging to this country which calls herself Mistress of the Seas. There is hardly a single passenger steamer engaged in the coasting traffic that would be considered in America as being fit to carry the better-class public."

"It must not be imagined that because everything offered is of such inferior quality it is also cheap; in reality, much more is charged than is customary in similar circumstances in other countries."

"With regard to transatlantic traffic, England is continually being left in the background by Germany, both in respect to speed and size of the boats, and especially with respect to comfort. And what applies to the transatlantic traffic applies still more to the service of steamers running

to Africa, Australia, and eastern Asia. On British steamers which ply between England and the Cape the passengers are so badly cared for that no one will travel by them a second time if he can help it. The experienced traveler prefers German, French, even Japanese, steamers to English boats on the China route." Mr. Bigelow concludes: "At every step we are painfully reminded of the fact that great nations begin to sink as soon as they cease to learn from others."

#### AN ENGLISHMAN ON ENGLAND'S DECADENCE.

MR. G. M. TREVELYAN, writing in the *Nineteenth Century* upon "The White Peril," declares that England, in 1851, was a very great country. To-day, she is the reverse.

"But the sudden destruction of rural life, which never was more prosperous than it was fifty years ago; the substitution of life in 'great cities' for life in large towns; the rapid diffusion of the vulgarity bred in those great cities into every corner of our island by locomotion and the cheap press, have destroyed all that was characteristic of Old England."

A population living a wholly artificial life in great cities cannot be the same as a population living in country cottages in small towns. As long as man minded his business—in cottage, farm, mansion, and shop—English life was vigorous and beautiful; but now a distracted city race lives a life that is, in its externals, like one long journey by the Underground Railway. The average Englishman—without culture, without ideal, without personality—has but little in common with the Puritan apprentice and yeoman of Cromwell's day. But yet people refuse to recognize the deterioration.

#### DEMORALIZATION BY THE PRESS.

The printing-press, which was relied upon to elevate mankind, is now the most potent engine for vulgarizing the mind. "Until the reading of nonsense comes to be regarded by respectable families in the same light as dram-drinking, the press will do more universal harm than the public-house."

"The greatest writer of our age . . . is Mr. Rudyard Kipling," whose works spread the doctrine "that force is the only means, national wealth the only end, courage and application the only human virtues. . . . What good art and literature there is in England now is for the initiated, and appeals to ever-narrowing circles. . . . The papers have lost the power of looking at facts as they are." "Journals, magazines, and the continued spawn of bad novels constitute our national culture, for it is on these that the

vast majority of all classes employ their power of reading."

#### AN EXAMPLE FROM WALES.

The uprooting of taste and reason that is going on by the printing-press must be recognized as one of the gravest evils that has ever threatened the human race. Parents should take steps to shield their children from the contagion of vulgar and fatuous printed matter. If boys and girls were brought up with the knowledge that most of what they see about them in shops and stalls is nonsense, if nothing but what was real reading were put into their hands, if as they grew up they were taught to regard the choice of books and newspapers as one of the most important duties in life, future generations might yet preserve taste and understanding. There is a movement in Wales which prevents the inroad of worthless novels, excludes betting, sporting and bad police news from the popular press, and induces the working man not only to use, but even to endow by subscription, their national universities. "As a national movement, intellectual Puritanism must be left to the despised Welsh, for the English, as a race, never cared about intellect, and have now ceased to be Puritan."

"The favorite entertainment of the modern English is vulgarity itself. The old feeling against theater-going . . . is fast dying out now that it is more needed."

There is great need for more education to train the mind to think, the eye to see, the judgment to choose, and the spirit to be exalted. There should be provision of facilities for good reading, good music, good discussion. Only by private combination in state enterprise we may fight the gigantic organizations of evil.

Good men of different parties, opinions, and types of mind should establish a rival popular press whose aim would be good.

#### APOTHEOSIS OF MATERIAL LUXURY.

In the last generation, intellectual, moral, and spiritual degeneration has set in, due to causes analogous and even related to those corresponding causes of physical degeneration such as overcrowding, drink, and want of country air and exercise.

"Into every corner of our island, into every corner of the world, ugliness, vulgarity, materialism, the insipid negation of everything that has been accounted good in the past history of man, 'post o'er land and ocean without rest,' armed with powers to destroy the old and propagate the new, far more powerful than the means of destruction and assimilation with which the Greek colonist, the Elizabethan adventurer, and

the religious refugee went forth across the seas in the days of old. All that is good in the world is threatened. Art, literature, religious leadership, political common sense, have in our island gone down before the tide in one generation. Material luxury alone seems likely to survive the general wreck, and the relation that luxury bears to the higher efforts of mind and spirit is inverse. We are mortgaging the whole future of mankind. Such is the problem of the age."

#### GERMANY AND ENGLAND.

IT is believed by many Englishmen that if the German people are not England's good friends, the Kaiser and government at least regard the English people with esteem. "Calchas," however, does not believe in that, and why he does not he explains in an article in the *Fortnightly Review* entitled "The Crisis with Germany and Its Results." He argues that German governmental aims are much more dangerous to England than German national enmity, and that therefore the chief significance of the present outburst of ill-feeling is the reinforcement which it gives to the German Government in the carrying out of its designs. The danger, therefore, is not that England may fail to realize the bitterness of German feeling, but that she may fail to foresee its results.

#### GERMANY ALWAYS ENGLAND'S RIVAL.

"Calchas" takes credit to himself for his repeated predictions that periodical illusions on the subject of a German alliance would not be fulfilled. German hostility does not depend upon the Boer war, but upon a permanent rivalry of interests. The Germans are the only people who are interested in overthrowing British sea power. But this could only be accomplished by the aid of Russia and France, and it is for this reason that Germany has given benevolent support whenever England was threatened with difficulties with France. Germany encouraged the occupation of Egypt, and in the recent Franco-Turkish dispute the German press tried to make difficulties between England and France by declaring that the integrity of Turkey was menaced. By such means Germany hopes in the end to gain the friendship of France and Russia.

#### THE CONTINENT SOLID.

"Calchas" does not believe in the supposed rivalry between Germany and France and Russia. The Continent is solid for peace among themselves, and Germany would not imperil her industrial organization for the sake of anything she might gain in a war with the Dual Alliance.



A naval war, with the support of those powers, is a different thing. Germany's policy is, therefore, to urge the principle of Continental solidarity against England and America, and she schemes for a naval coalition. So far from losing by such a war, Germany would gain, for in the case of a general blockade she would be the workshop of the Continent. If England were to go to war with France and Russia, a naval coalition with Germany would be certain, for thereby, and thereby alone, could Germany realize her ambition of ousting England from the seas.

#### ENGLAND'S SAFETY—RUSSIA. THE PRICE—PERSIA.

This being taken as proved, what should England do? "Calchas" says, make terms with Russia, and whether his premises are correct or not, his conclusion is indisputable. With France, says "Calchas," England has no longer any vital cause of possible quarrel. With Russia, she can quarrel only over Persia. "Calchas" believes that Russia is determined to get a footing on the Persian Gulf, and therefore it is in that quarter that England must compound with her. Let her, says "Calchas," take a port, but, still more important, make no limitations as to the use she is to make of it.

"To concede to the empire of the Czar a port upon the Persian Gulf—that is to say, a main outlet for its territory in central Asia—which it was forbidden to fortify, would be, not to effect the only settlement worth working for, but to set up a more dangerous subject of irritation between the two countries than any which now exists. Bunder Abbas must be as Russian as Port Arthur or Sebastopol, or the alternative must be, in the ample language of Lord Curzon, 'a war that would ring from Pole to Pole'—unless, indeed, which is more probable, we should ultimately act at Bunder Abbas as we did at Port Arthur."

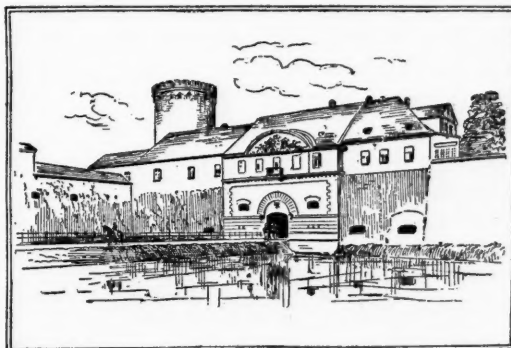
In response to this, "Calchas" thinks that Russia would join England in guaranteeing the integrity of China south of the Great Wall. Such an agreement would not only protect England against German ambitions in Europe, but would preserve China. "Calchas" declares that the Persian Gulf is the focus of the future relations of Germany, Russia, and Great Britain. But would Russia agree? "Calchas" thinks so. Russia and France, he says, have no desire to overthrow Great Britain in order to establish the commercial and naval supremacy of Germany. Moreover, German policy will not change, for Germany's policy is her natural one, "the inevitable method of a patriotic statesmanship." It is England's business to frustrate this aim, and she can only do so, says "Calchas," by an agreement with Russia.

#### GERMANY'S MOBILIZATION FUND.

IN the Julius Tower of Spandau, Germany, lies the great sum of 120,000,000 marks (\$29,000,000), set aside by an act of November, 1871, from the French indemnity, for use, should the necessity arise, for the sudden mobilization of German troops. This fund is examined once a year. At this ceremony a member of the Reichstag committee on the national debt is usually present, and in the *New Yorker Revue* for December 8, Hermann Pachnicke describes his visit to the tower in this capacity in the month of October last.

Three iron gates, the second being latticed, letting in light for the examination, open before the deputation into the interior of the tower, where the wooden chests, not handsome, by any means, but filled with a rich store, are piled high above and beside one another. Fifteen piles of thirty chests each are on the lower floor, and twenty piles of thirty and six piles of fifteen each on the upper floor, reached by a winding wooden staircase.

These chests, of which there are twelve hundred, are  $1\frac{1}{2}$  feet long and  $\frac{1}{2}$  foot wide, and weigh about 87 pounds each. Each chest contains 100,000 marks in ten and twenty mark pieces, divided evenly among ten linen bags. The chests are first all counted and the seals examined. The member of the National Debt Commission then marks certain ones which are to be weighed and emptied, and an under-officer and two workmen bring these marked cases and set them on a decimal scale. Their actual weight is found to tally with the required weight as marked on the outside of the chest; or if there be a difference, it consists simply of a few grams and has been caused by the variation in the amount of moisture in the atmosphere. One chest is then taken, the sheet-iron covering loos-



THE JULIUS TOWER AT SPANDAU.

(Where the strong boxes containing Germany's mobilization fund are kept.)

ened with a chisel, the long, thick nails extracted, and the cover lifted. The bulky linen bags are taken out and weighed a second time on special mint scales. Still no discrepancy is discovered. This proof, however, is not sufficient. A single bag is selected at random, the seal broken, and its contents poured out upon the scale, where the golden disks lie with an alluring glitter, seeming to bid them mockingly to "lay to," while the examiners, on their part, make jesting calculations as to how far this single ten thousand would go toward its destined purpose. The weight being found to be correct to the ounce, the gold pieces are poured back into the sack, and the chest is nailed up again and carried back to the identical spot from which it was taken. A record is duly made of the whole proceeding, ending up, usually, with the comforting assurance that "all is well."

The tallow candles which supplemented the light let in by the latticed iron gate are now extinguished, and the inventory is at an end.

But wait! For the sake of further assurance, a little trip must be made into the cellar adjoining, for it may be there have been attempts to undermine the tower. 'Tis true, the walls are more than two meters in thickness; still, wicked persons may be suspected of anything. So the cellar is traversed, and the wall next the tower carefully examined, to see that it has not been bored through or disturbed, after which the committee, filled with the consciousness of having performed its duty to the last tittle, returns to the open air out on the parade-ground.

A similar examination of the wall of the cellar is made daily by an officer of the tower, and once a year, usually in spring, come two officers from Berlin, this time, however, unaccompanied by a Reichstag member, to assure themselves that the wall has not been tampered with. Besides all this, a military guard,—relieved every two hours; in winter, every hour,—watches by day and night over the place where this national treasure lies.

Such careful precautions ought surely serve to discourage at the very outset all designs of a criminal nature on the money.

The question, however, arises as to whether the object of this great sum is served by allowing it thus to lie idle, involving, as it does, an annual loss of from four to five millions of marks in interest. The present generation, with its more highly developed system of credit, may think differently of this than did the past.

That this sum would not, however, be very adequate for the purpose for which it is designed is undoubtedly true, as anything like an extensive mobilization of troops would exhaust it in a

few days. This may be gathered from the fact that the expenses of Prussia alone, in 1870, amounted to 6,000,000 marks daily; and since that time the cost of mobilization has been considerably increased, on account of the enlargement of Germany's army and navy.

It is interesting to contemplate what the total sum would be to-day if the fund had drawn compound interest during the past thirty years.

#### A FRENCH EXPERT ON THE BOER WAR.

CAPTAIN GILBERT, whose articles on the Boer war we have frequently noticed before, contributes to the second November number of the *Nouvelle Revue* a paper in which he surveys the whole field of operations from both a tactical and strategical point of view. The article possesses a melancholy interest, for we regret to learn that Captain Gilbert is now dead. The captain considered that the war afforded little instruction for military experts, for two reasons—first, because of the weakness of the Boers; and, secondly, because of their inexperience in waging warfare. He explained that the British war office, in order to lessen the shame of British defeats, exaggerated the forces of the Boers, which he placed at 38,000 men and 70 guns; and he went on to explain that this weakness of the Boers disqualified them from making tactical combinations, economizing their forces, and finally taking the offensive. Indeed, he seemed to think that nothing could exceed the infantile simplicity of the dispositions on both sides. One can almost feel that he thought it a pity that so much blood should have been shed without affording more instruction to the scientific student of campaigns.

#### ARTILLERY IN ATTACK

It will be remembered that the checks which the British suffered on the Tugela and at Modder River induced many writers to condemn absolutely all frontal attacks, and to uphold the theory of defense by excellently trained marksmen. But Captain Gilbert held that the general failure of the British method of attempting to clear a position with artillery before the attack should not be considered an argument against artillery in general. It was because of the neglect to throw out skirmishers and scouts in front to feel for the position of the enemy. Practically, artillery is no good except upon a discovered objective. General Langlois has shown that the artillery fire should begin at the moment when the troops advance to the decisive attack, and the fire ought to be continued over their heads, and in this way the exact position of the defense

will commonly be disclosed. Indeed, it is the united action of the three arms which forces the defense to throw aside its mask. This law was not recognized by the English, just as it was neglected by the Russians at Plevna. In both cases artillery fire remained useless, but it would be wrong to conclude from that that artillery fire is always in vain.

Captain Gilbert cited detailed statistics to show that the Mauser bullet proved more immediately fatal than the *chassepôt* in the Franco-Prussian War, but by way of compensation the mortality among the wounded is less than half; the total mortality in the South African war remains 10 per cent. less than that of the Germans in the Franco-Prussian War.

### THE MIDDLE WEST.

WHEN "the West" is spoken of as a section of the American Union, the group of States so designated may be larger or smaller; but the term is no longer used, as formerly, to cover the whole region between the Alleghanies and the Pacific Ocean. The great interior States lying between the Alleghanies and the Rockies, and north of the Ohio River, are coming more and more to be regarded as constituting a section by themselves. In the census reports, this group of imperial commonwealths figures as the North Central division of the Union; but in popular phrase this region is now the "Middle West"—comprising the States of Ohio, Indiana, Illinois, Michigan, Wisconsin, Minnesota, Iowa, Missouri, Kansas, Nebraska, North Dakota, and South Dakota. In a happy description of this vast domain, contributed to the *International Monthly* for December, Prof. Frederick J. Turner, of the University of Wisconsin, says:

"If the greater countries of Central Europe, —France, Germany, Italy, and Austria-Hungary,—were laid down upon this area, the Middle West would still show a margin of spare territory. Pittsburg, Cleveland, and Buffalo constitute its gateways to the Eastern States; Kansas City, Omaha, St. Paul-Minneapolis, and Duluth-Superior dominate its western areas; Cincinnati and St. Louis stand on its southern borders; and Chicago reigns at the center. What Boston, New York, Philadelphia, and Baltimore are to the Atlantic seaboard these cities are to the Middle West. The Great Lakes and the Mississippi, with the Ohio and the Missouri as laterals, constitute the vast water system that binds the Middle West together. It is the economic and political center of the republic. At one edge is the populism of the prairie; at the other, the capitalism that is typified in Pitts-

burg. Great as are the local differences within the Middle West, it possesses, in its physiography, in the history of its settlement, and in its economic and social life, a unity and interdependence which warrant a study of the area as an entity."

### THE SEAT OF AMERICAN DEMOCRACY.

After an extremely interesting review of the industrial and political development of the Middle West, Professor Turner points out that while the peculiar democracy of the American frontier has passed away with the conditions that produced it, the democratic aspirations are still cherished by the people.

"The democracies of the past have been small communities, under simple and primitive economic conditions; at bottom, the problem is how to reconcile real greatness with bigness. It is important that the Middle West should accomplish this task, for the future of the republic is with her. Politically, she is dominant, as is illustrated by the fact that six out of seven of the Presidents elected since 1860 have come from her borders. Twenty-six million people live in the Middle West, as against twenty-one million in New England and the middle States together, and the Middle West has indefinite capacity for growth. The educational forces are more democratic than in the East, and the Middle West has twice as many students (if we count together the common-school, secondary, and collegiate attendance) as have New England and the middle States combined. Nor is this educational system, as a whole, inferior to that of the Eastern States. State universities crown the public-school system in every one of these States of the Middle West, and rank with the universities of the seaboard, while private munificence has furnished others on an unexampled scale. The public and private art collections of Pittsburg, Chicago, St. Paul, and other cities rival those of the seaboard. 'World's fairs,' with their important popular educational influences, have been held at Chicago, Omaha, and Buffalo; and the next of these national gatherings is to be at St. Louis. There is throughout the Middle West a vigor and a mental activity among the common people that bode well for its future. If the task of reducing the Province of the Lake and Prairie Plains to the uses of civilization should for a time overweigh art and literature, and even high political and social ideals, it would not be surprising. But if the ideals of the pioneers shall survive the inundation of material success, we may expect to see in the Middle West the rise of a great and intelligent society where culture shall be reconciled with democracy in the large."

### MAKING FORESTS INTO NEWSPAPERS.

IN the January *Success* there is an interesting article by Frank Hix Fayant describing the manufacture of wood-pulp paper from our native forests, and giving an idea of the enormous demand for this sort of paper from the great newspapers. Taking the New York newspapers alone, Mr. Fayant figures that the chief dailies of Manhattan require about 135,000 tons of paper a year, for which they have to pay about \$5,400,000 annually. He places the *Journal* at the head in point of the amount of paper consumed, with 40,000 tons a year; the *World* next, with 30,000 tons; then the *Herald*, with 25,000 tons, and the *Sun*, *Times*, *News*, *Press*, and *Tribune* together, about 30,000 tons. The *Journal*, then, has to pay about \$4,000 a day for its paper. In other words, Mr. Hearst cannot pay his bill for white paper until he has sold 800,000 *Journals*. None of the morning papers could publish their editions without loss except for the advertising, even if the only bill they had to pay was for white paper.

### MAKING THE PAPER.

This white stock for newspapers is made chiefly of wood, and in America there are now more than 1,100 pulp and paper mills, with a capacity of 2,500,000 tons of paper a year, worth \$200,000,000. "The State of New York leads in production, her pulp mills having an average daily output of two thousand tons, or nearly half the total American production. All along the edges of her wilderness, and even in the heart of her forests, are the pulp and paper mills, transforming the trunks of the forest giants into paper three-thousandths of an inch thick, for Eastern consumption only. The forests of New England, Michigan, Wisconsin, and Pennsylvania furnish the bulk of the remainder for the country. Night and day, an unbroken stream of paper comes from these mills. The printing-presses are voracious; so rapidly do they devour the great white rolls that before the branches of the tree have withered the trunk, in a myriad fragments, is flying to the four corners of the earth, carrying the news of the moment.

### LOOKING TO THE FUTURE OF THE FORESTS.

Mr. Fayant does not think that the newspapers are destroying our forests, though there are others that do think so. He admits that the pulp mills use about a billion feet of lumber a year, but he calls attention to the fact that the sawmills consume twenty times as much, and that the reports of the United States Geological Survey show that not a hundredth part of the timber felled in this country goes to the pulp mills.

"No one is more concerned in the vital question of forest preservation than the man whose income is derived from paper-making, and the owners of the great pulp mills of our Northern forests are using all the scientific knowledge available to prevent the destruction of precious woodlands. No young trees are felled; only those of a greater trunk-diameter than nine inches are used, and these are scientifically selected. From Washington, the Government's bureau of forestry spreads instruction as to woodland preservation, and some of the leading universities, like Cornell and Yale, have courses of forestry. The students of forestry at Cornell devote four years to study for the degree of Bachelor of Science in forestry, and spend months in practical work in the university's demonstration forest in the Adirondack Mountains. For the preservation of our woodlands, the prevention of fires is of far greater importance than watching the pulp mills. In the Adirondack Mountains, last year, despite New York's vigilant care, twenty-six thousand acres were burned over. Enough timber is destroyed by fire in this country every year to supply all the pulp mills."

### HOW THE PAPER IS MADE.

"Nowadays, the paper-maker uses two kinds of pulp for news paper,—the ordinary ground-wood pulp, in which the entire trunk of a spruce, hemlock, or balsam tree, after the bark has been removed, is crushed to a soft, fluid mass, and sulphite pulp, which is the fiber of the tree, left after all the intercellular matter has been dissolved by sulphurous acid. Ground-wood pulp, a German invention, was first made in this country at Stockbridge, Mass., in 1867; while sulphite pulp, an American invention, was first made at Providence, R. I., in 1884. These facts show that the making of our news paper of to-day is actually an 'infant industry.' Sulphite pulp, being solely fibrous, gives strength to the ground wood.

"Let us consider how news paper is made in one of the great mills of the Adirondack Mountains, where the giant machines, rattling on, day after day, never stopping, are scarcely able to supply the demand of a single New York newspaper. The timber, which is felled in the forests of the North in winter, is floated to the mill in the mountain streams by the spring freshets, and piled up in great heaps about the mill buildings, whose many roofs, chimneys, and towers form a strange picture in the wilderness against the background of cloud-topped mountains, green with primeval forests.

"By being fed to shrieking saws, the spruce



logs are cut into pieces that are no longer than a man's arm. 'Barking' machines, which have disks of rapidly whirling radial knives, attack the wood and tear off the bark. To prevent a waste of any part of the timber, an endless chain conveyor carries the bark to the boiler-room, where it is fed to the fires. Another conveyor, like the *trottoir roulant* at Paris, carries the clean logs to the grinding-room, where a long line of three-horned monsters is waiting for them."

"Flumes beside which men are mere pygmies bring the mountain torrents rushing down to the grinding-room, feeding the energy of forest cataracts to the great turbine. They have an enormous work to do. Within the iron cases of the three-horned monsters are grindstones of a special hardness, turned by the turbines. The 'horns' are hydraulic presses, which force the logs under them against the stones. Thus, the wood is ground to pulp, the stones eating away three feet of wood an hour. The engineer tells us that more than ten thousand 'horse-power-hours' of energy are needed to convert one cord of spruce into pulp, and that the mills use more power than a whole manufacturing city in New England. Cold water flows continuously on the grindstones to prevent the friction setting fire to the wood, and the mixture of ground wood and water, which flows away from the grinders as a pinkish, gruel-like fluid, runs over dams and through screens and drying-machines, until, a thick mass, it is either put in storage tanks, in bulk, or formed by machinery into thick sheets that can be rolled up like blankets. It is then ground-wood pulp, ready for the paper machines. Every cord of wood has produced nearly a ton of pulp.

"The sulphite pulp is prepared in a different way. The logs, when they come from the barking-machines, are cut up lengthwise, by 'splitters,' and then cut crosswise, by 'chippers,' into pieces less than an inch thick. This thickness gives the length of the fiber. A 'chipper,' with its whirling knives, eats up a hundred cords of wood in a day. By falling on another 'moving sidewalk,' the chips are carried away to be screened and then hand-picked,—to sort out dust and dirt,—and then are carried to storage bins above the great sulphite 'digesters'—monster steel cylinders, with conical ends, standing upright in a row."

The final processes include the use of sulphuric acid to attack the cellular tissue of the wood, and chloride of lime to bleach the pulp, and the final passage of the snowy pulp through the paper machine over a woven-wire cloth. It is only in the higher grades of paper, nowadays, that rags are used, and such paper is entirely too costly to serve for any modern periodical.

#### A NEW COÖPERATIVE SCHEME.

THE Rochdale Coöperative Society, in England, with its business of \$300,000,000 a year, is the best existing instance of distributive coöperation. Up to the present time, while there have been many American experiments in this kind of coöperation, some of which have been moderately successful, no business approaching that of the Rochdale has been built up anywhere in the United States on coöperative lines, although the numerous successful trusts organized here testify to the practicability of the Rochdale methods.

The latest attempt at industrial coöperation on a large scale is what is known as "The Coöperative Association of America," with headquarters at Lewiston, Maine. This enterprise is described in the *Arena* for December by the Rev. Hiram Vrooman. From his account, it appears that it is the purpose of this organization gradually to apply coöperative methods in production as well as in distribution. The hope of the projectors of the scheme is that the establishment of one new branch of business after another will tend to increase the income of every member of the association. Mr. Vrooman illustrates this by a statement of what has already taken place.

#### RESTAURANT, GROCERY, AND MARKET UNDER ONE MANAGEMENT.

"The restaurant was the first business to be undertaken. The patronage was increased by the incoming of new coworkers, because the new coworkers boarded at their own restaurant in preference to competing ones. With this increase of patronage was an increase of profits, and the increase of profits with this association means increase of income for every coworker. The grocery store and market were next established. The clerk coworkers who did not keep house for themselves took board at their own restaurant, thereby increasing again the general profits. In turn, the restaurant began at once to make its purchases from the grocery and market of the association, and thereby the earnings of the store were increased. Thus, the store increases the business of the restaurant and the restaurant increases the trade of the store. And as all profits are divided equitably among the coworkers, the income of each has increased with every increase of business. When the farm industry is established, next spring, the produce can be disposed of through the association's own store and market, and thereby the financial success of the farm will be insured, whereas every coworker employed at the farm becomes a new patron of the store. A printing plant is soon to be added to the general industries, and also a

laundry and a shoe manufactory, together with other kinds of retail stores. Every new business will play into the hands of the others by increasing their profits, thereby increasing the income of every coworker.

"By the time the association has accomplished the federation of all the branches of legitimate business, it will have turned into the direction of its own treasury the thousand different leaks that now diminish the wages of the toiler, and thereby save to labor or to the coworkers all the wealth approximately that labor creates. And then, I predict, the average wage of a coworker will be thrice the average wage of the present-day workman. Furthermore, the income of coworkers will increase very considerably as the result of the economy of improved business organization."

Mr. Vrooman states that at present the association is conducting the largest grocery business and general market in the combined cities of Lewiston and Auburn, Maine. Its grocery, market, and restaurant are operated in buildings built and owned by the association. The grocery and market have more than six hundred pledged customers, besides the regular patronage of the coworkers. Each one of the pledged customers has invested twenty-five dollars in the business, with the understanding that he is to make purchases at the store and receive, every six months, as a rebate, most of the net profits accruing from his purchases.

#### SENATOR TILLMAN DEFENDS THE DISPENSARY SYSTEM.

**I**N *Frank Leslie's* for January, Senator Benjamin Tillman gives a characteristically forcible exposition of the dispensary law for which he is responsible in South Carolina. The Senator thinks the law is a fine working success, and gives his reasons very definitely. He compares the results obtained under the dispensary system with those obtained in prohibition Maine and Kansas. He publishes statistics showing that whereas in Kansas there is one liquor-retailer to 595 people, and in Maine one retailer to 585 people, in South Carolina there is only one liquor-seller to 3,005 of the population.

Four hundred and forty-six persons are retailing liquor in South Carolina, having paid the United States revenue tax, 94 being dispensers, and the other 352 being illicit dealers, a majority of them in the city of Charleston, who have obtained permits from the United States Government. Senator Tillman thinks this issuance of licenses by the United States to sell liquor in South Carolina contrary to the law of South Carolina is anomalous.

Senator Tillman gives an excellent detailed account of the actual working of the dispensary system. The profit made by the local dispenser after deducting expenses goes half to the county and the other half to the town, the State receiving its profits in the price charged to the local dispenser. The net profits to State, town, and county are nearly \$600,000 a year, the State's profit going to the free-school fund.

#### BETTER THAN LICENSING SALOONS.

Senator Tillman gives four reasons why his method of managing the liquor traffic is superior to the license system:

"First. Liquor is the only article of commerce in general use that is consumed at the time and place of its purchase. It is safe to say that three-fourths of it is thus disposed of. The dispensary law enforces a different method, by requiring the purchaser to take it away as he would a package of shoes or a sack of flour. He must go somewhere else than to the place where he buys it to consume it.

"Second. The element of personal profit which lies at the root of the saloon evil is destroyed. The dispensers receive fixed salaries, proportionate to the amount of work they do. They don't get a commission on sales, and have no incentive to push them.

"Third. 'Treating' is destroyed, and this does more for sobriety than possibly any other feature of the system. The man who has bought a bottle at the dispensary may treat one or a half-dozen of his friends to one drink, and that will be all. The inducement and obligation to reciprocate which are so well understood do not exist.

"Fourth. At sundown, the dispensary closes. It opens at 8 o'clock in the morning. The legitimate demand for whiskey is supplied during daylight, and the dispenser, having closed up his place of business, has no incentive to reopen it to make a sale. Under no form of license is this possible. Besides, it is a misdemeanor to make sales in any way or at any time except as the law provides.

#### THE DISPENSARY SUPERIOR TO PROHIBITION.

"Thus far, the comparison has been with the saloon or license system rather than with prohibition. With the latter, there is really no comparison to be made, except to point to results. Of course, it is well understood, where prohibition has been tried, that the certificate of a physician that liquor is needed for medicine has been an easy thing to obtain. Hypocrisy and perjury were both increased. That men will drink is so well understood that the facts adduced to show how little prohibition prohibits in

Kansas and Maine are alone necessary to show that the dispensary is superior to that system of liquor control. The testimony of unbiased judges is that in South Carolina drunkenness has decreased to a marked degree—from 50 per cent. to 75 per cent.—since this law went into effect.”

#### INTENSE COLD ARTIFICIALLY PRODUCED.

IN *Harper's Magazine* for January there is an unusually thorough and valuable contribution to the current literature of popular science, in Dr. Henry Smith Williams' account of the "Experiments in Low Temperature," conducted at the Royal Institution of London. Dr. Williams calls our attention to the fact that in this institution all the important scientific discoveries of Thomas Young, Sir Humphry Davy, Michael Faraday, and John Tyndall were made, and he says the most important work done in the present generation, and which is still being prosecuted there, is the experiments of Prof. James Dewar, on the properties of matter at excessively low temperatures.

Davy and Faraday began their experiments with low temperatures in 1823, and Faraday continued them in 1844. Faraday succeeded in getting low temperatures which enabled his successors to liquefy all gases except six,—nitrous oxide, marsh gas, carbonic oxide, oxygen, nitrogen, and hydrogen, which became known as "permanent gases." The scientists kept on with their attempts to attain still lower temperatures, and finally, in May, 1898, Professor Dewar, at the Royal Institution, announced that nitrogen and helium had been liquefied, and no such thing as a "permanent gas" is now known.

#### PROFESSOR DEWAR'S METHOD OF COOLING.

Instead of using the vibration plan to produce cold, Professor Dewar used a new refrigerating process, founded on the idea of accumulating the cooling effect of an expanding gas by allowing the expansion to take place through a small orifice into a chamber in which the coil containing the compressed gas was held. So beautifully does this principle work, that in the apparatus now used compressed air passing into the coil at the ordinary temperature without other means of refrigeration begins to liquefy in about six minutes,—a result that seems almost miraculous when it is understood that the essential mechanism by which this is brought about is contained in a cylinder only seventeen inches long and eight inches in diameter. It was with this marvelous apparatus that Professor Dewar liquefied hydrogen.

With the aid of an extraordinarily successful vessel for holding liquefied gases, a receptacle in-

vented by himself,—consisting chiefly of a glass vessel with double walls inclosing a vacuum,—Professor Dewar has made still further advances beyond the liquefaction of hydrogen. The final goal is the point of absolute zero, at which the heat vibrations of matter are supposed to be absolutely stilled.

#### ONLY FOURTEEN DEGREES FROM ABSOLUTE ZERO.

"Theoretically, this point lies 272° below the Centigrade zero. Liquid hydrogen, at atmospheric pressure, has a temperature of -237°. Solid hydrogen—which Professor Dewar produced in August, 1899, by allowing liquid hydrogen to boil in a vacuum—is believed to reach a temperature of -258° C., or only 14° from the absolute zero. A gap of 14° C. surely does not seem so very great. But, like the gap that separated Nansen from the geographical pole, it is a very hard road to travel.

"And when the goal is reached, what will be revealed? That is a question as full of fascination for the physicist as the North Pole mystery has ever been for the generality of mankind. In the one case as in the other, any attempt to answer it to-day must partake largely of the nature of a guess, yet certain forecasts may be made with reasonable probability. Thus, it seems likely that at the absolute zero all matter will have the form which we term solid; and, moreover, a degree of solidity—of tenacity and compactness—greater than ever otherwise attained. All chemical activity will presumably have ceased, and any existing compound will retain its chemical composition unaltered so long as absolute zero pertains; though in many, if not in all, cases the tangible properties of the substance—its color, for example, and perhaps its crystalline texture—will be so altered that it is no longer recognizable by ordinary standards, any more than one would ordinarily recognize a mass of snow-like crystals as air.

"It has, indeed, been suggested that at absolute zero all matter may take the form of an impalpable powder, the forces of cohesion being destroyed with the vibrations of heat. But experiment gives no warrant to this forecast, since cohesion seems to increase exactly in proportion to the decrease of the heat vibrations. Still less warrant is there for a visionary forecast, at one time entertained, that at about zero matter will utterly disappear.

"But one cannot answer with so much confidence the suggestion that matter at zero may take on properties hitherto quite unknown, and making it, perhaps, differ as much from the conventional solid as the solid differs from the liquid, or this from the gas."

### HOW THE LUNGS RESIST DISEASE.

IN the last number of the *Beiträge zur Pathologische Anatomie und Allgemeinen Pathologie*, Dr. Jul. A. Grober, of the "Medizinische Universitätsklinik," in Jena, gives a detailed study of the lungs, and of the tissues and cavities surrounding them, with an account of experiments made to determine how these parts coöperate to resist disease.

The lungs consist of two sacs whose walls are formed of thin, transparent tissue, which is also folded back and forth inside of each sac to form an infinite number of small compartments, giving the whole lung a fine, sponge-like structure. Blood vessels as fine as threads run all through these partitions, which are so thin that gases easily pass through them. Over the lungs are the pleura,—delicate membranes arranged so that one fold covers a lung, another fold the wall of the chest on that side, leaving a closed space between, the pleural cavity, which contains a viscid fluid that keeps the membranes moist and allows them to move freely upon each other.

With every breath drawn into the lungs, these delicate tissues are exposed to germs that may be floating in the air ready to feed upon the membranes and produce disease, or to irritating organic bodies that may cause inflammation. Dr. Grober endeavored to get accurate data as to the extent to which these organs can resist antagonistic forces, and the mechanism of the resistance.

The pleura are thin membranes containing single muscle fibers, blood vessels, and lymphatics, the latter with small openings in their walls which place them in direct communication with the pleural cavity, which the pleura inclose.

#### HOW FOREIGN SUBSTANCES ARE DISPOSED OF.

After injecting a weak salt solution containing grains of carmine or India ink into the blood, the white corpuscles of the blood were found to be loaded with particles which they had taken up, showing them to be protective agents in this case, but none of the solution injected seemed to pass over into the lymphatics; for although the lymph corpuscles resemble the white corpuscles of the blood, and possess a similar power of independent action, they did not take up any of the particles, and no carmine grains were found in the pleura. When powdered India ink was forced into the air passages, the particles were found later in the pleural fold lining the chest wall, seeming to justify the conclusion that there is a constant flow of serous fluid away from the lung through the pleural cavity to the opposite side, and that foreign bodies are carried by purely mechanical means in the direction of the current. Bodies too large to be disposed of in

this way remain imbedded in the tissues, where they are gradually overgrown with cells, which finally break them up and destroy them. Other small particles, with about the same specific gravity as the lymph, pass from the pleural cavity directly into the lymphatics through the openings in their walls, and are carried away. The lymphatics of the diaphragm, lying directly beneath the lungs, also have openings through which foreign bodies may pass.

As a whole, the pleura can remove and resorb foreign substances, whether harmless or not; harmful things, especially bacteria, and fluids that cause inflammation, being taken up by the blood, and either removed or chemically changed to become harmless. This characteristic of the pleura is doubtless a most important function for protection. Fluids injected into the pleural cavity of young dogs were resorbed at the rate of fifteen cubic centimeters in five minutes or less, according to the size of the dog and the amount of resorbing surface; but the wall of the thorax and the lungs must remain intact, or the resorptive power becomes greatly diminished. Much of this action depends upon purely mechanical properties, through the physical processes of osmosis and capillarity, as can be shown by dead animal membranes. In the living animal, these processes are reinforced by the movements of the breathing organs and by the circulation of the blood.

#### PROTECTION FROM BACTERIA.

Besides inorganic bodies in the air which may be injurious to the lungs, there are the bacteria, with their poisons, which are present to a greater extent than is generally supposed, always ready to attack the membranes, and even able to penetrate the lungs and enter the body. These are guarded against by the leucocytes, which are always present in the pleural cavity, where large masses of them are produced *de novo* at the least irritation, making a very favorable battlefield, and the leucocytes are aided by the lymph corpuscles, which are also able to destroy bacteria. In addition to this, the surface layer of healthy pleura has strong bactericidal powers, and on this account it is thought that the pleura are not subject to infection to as great a degree as has been supposed. Serious consequences follow anything that interferes with this resorptive power. The main points established were the direct communication between the pleural cavity and the lymphatics by means of small openings in their walls; the fact that sound pleura can resorb a certain mass of foreign bodies and fluids, varying for every animal according to its size and age, the resorption being brought about by means



of diffusion and osmosis, by breathing motions and changes of pressure; and the fact that sound pleura can resist bacteria and their toxins to a certain extent without being injured, but that inflamed pleura lose this power.

### FASTER THAN THE LOCOMOTIVE.

IN the excellent January number of *Outing*, Mr. R. G. Betts tells of the recent astounding feats of the racing automobiles in speed trials, and gives some interesting figures of the records to date of the fastest machines. The racing machines with the records are chiefly French-built, because the American manufacturers have not seen fit to build the enormously powerful automobiles of 30, 40, and even 50 horse-power, useful only for racing purposes.

"It was only in the fall of 1900 that the automobile established a track reputation, so to speak. In that year, five race meetings were held; this year, eight meetings were conducted. The results, coupled with a mile in 1 minute 11 seconds, made in France, afford the only comparisons on which the speed-development of the vehicle may be based. Let the figures speak for themselves:

#### GASOLENE.

1900.	1901.
1 mile..... 1 min. 11 sec.	51 4-5 sec.
5 miles..... 7 min. 43 4-5 sec.	5 min. 33 4-5 sec.
10 miles..... 15 min. 9 1-5 sec.	11 min. 9 sec.
20 miles..... 30 min. 30 1-5 sec.	25 min. 25 2-5 sec.
50 miles..... 1 hour 17 min. 50 sec.	

#### STEAM.

1900.	1901.
1 mile..... 1 min. 6 sec.	1 min. 6 sec.
5 miles..... 10 min. 45 1-2 sec.	9 min. 40 3-4 sec.
10 miles..... 21 min. 13 sec.	19 min. 5 4-5 sec.

#### ELECTRIC.

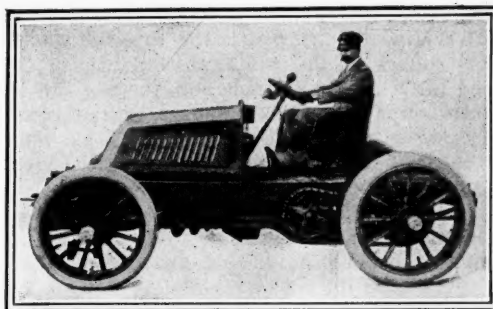
1900.	1901.
1 mile..... 2 min. 34 sec.	1 min. 3 sec.
5 miles..... 10 min. 44 sec.	10 min. 28 sec.

"The truest measure of speed-development is furnished, however, by the records of the classic Paris-Bordeaux road race (327½ miles), of which four have been held, as follows:

1895.....	22 hours 25 minutes.
1898.....	15 hours 15 minutes.
1899.....	11 hours 42 minutes.
1901.....	6 hours 11 minutes.

"Words cannot add to the impressiveness of the astounding development told by these figures. From 22 hours 25 minutes in 1895 to 6 hours 11 minutes in 1901! It would be a sacrilege to say more.

"With road racing tabooed or greatly restricted, even the French are making for the establishment of tracks, or motordromes, as they style them, and a year or so hence it may be possible to say that automobile sport, to fetch the term, has really taken root. While the



ONE OF THE POWERFUL FRENCH RACING MACHINES USED IN RECENT RECORD-MAKING.

horse tracks which have been made to serve lack the necessary banking to insure high speed with safety, it will require more than a banked course to make automobile racing either attractive or exciting. Not even its most devoted friends hold to the contrary. The several contests held on American tracks have been devoid of even a suspicion of the elements that arouse the fine frenzy or warm the blood of the sports-lover. In truth, they have been little more than straggling processions, without life or dash or anything else calculated to evoke enthusiasm. It is for those concerned in its development to so classify or handicap the many horse-powers and weights and other what-not that genuine racing, not 'runaways,' may be the rule.

"Regardless of what the future may hold, the present is crammed with actualities—with automobiles of every size and form and power, with automobiles at every price from \$500 upward, and capable of every speed from 20 miles to—shall we say 100 miles per hour? We at least have Fournier's assurance that a mile in 35 seconds is not improbable.

"Of the three motive powers, electricity stands for safety and cleanliness, but for limited radius of use; gas stands for unlimited pace and power and range of action; steam is best described, perhaps, as the middle layer in the automobile cake."

### A PAINTER'S STORY OF THE KAISER'S BOYHOOD.

THE venerable artist, Mr. W. P. Frith, R.A., now over eighty years, has been regaling Mr. D. F. White, in the *Temple Magazine*, with reminiscences of his life and work. There is one fine story of the present Emperor of Germany which well illustrates Wordsworth's saying about the child being father of the man. Mr. Frith was telling how he was engaged in painting, by the Queen's command, "the wedding of

the Prince and Princess of Wales," and on the interviewer inquiring after the royalties who sat for the picture, the painter answered thus:

"Little Prince William, now the German Emperor, was one. He appears in the picture dressed as a little Scotch boy, but I am afraid that the likeness is not a very good one, for I found him a fine handful.

"He was accompanied by his governess, a German baroness, but we could do nothing with him. He would not keep still a moment.

"At last I hit upon a good plan, as I thought, to keep the mischievous young prince quiet. The picture was ten feet long, and I ruled off a portion of one corner of the canvas about a foot square on which to paint a picture himself, cautioning him to keep strictly within the prescribed limits. I provided him with paints and brushes, and went quietly on with my own work. All of a sudden I was startled by an exclamation of horror from the baroness, and turning round, saw the cause of her consternation. The young Turk had been calmly wiping the wet brushes on his face, which was lined with streaks of brilliant vermilion, blue, and green. The baroness was in a great state of mind lest the crown princess might enter at any moment and see her son in all his war paint. 'Oh, I will soon remove that!' I said, and taking a cloth soaked in a little turpentine, was quickly removing the paint, when I was stopped by a piercing scream, followed by a smart blow from the little fist of the young royalty. It was followed by kicks and howls, the latter so lusty that they threatened every moment to bring his mother into the room.

"It appears that the turpentine had found out a small scratch or cut, and no doubt made it very painful.

"The young prince never forgave me for the ill-timed application, and was naughtier than ever when he came to see me again, so that I did not succeed in getting anything like a satisfactory likeness."

#### WIT AND HUMOR OF ENGLISH CHILDREN.

DR. T. J. MACNAMARA contributes a delightfully amusing article to the *New Liberal Review* on "Children's Witticisms." The alleged funny things said by children are, he maintains, mostly apocryphal, and when authentic, quite unconscious. Such, for instance, must have been the following, which Dr. Macnamara quotes:

"When Mrs. B. has called upon Mrs. A., and the hostess has received the visitor with the most gushing enthusiasm, it is a *teetle* embarrassing for Tommy A. to sidle up to Mrs. B. and ask,

'Do you live in a nice room, Mrs. B.?' Because Mrs. B. replies, 'What a curious question! Why do you ask it?' To which Tommy answers, 'Why, as you were coming up the garden, mamma said that *your room was better than your company.*'"

Unconscious also must have been the child who said, "Quotation is the answer to a division sum." The child who defined "antidote" as "a silly ant" probably analyzed the former as an ant in its dotage. The following definition of a lie was probably, however, the fruit of good experience:

"An abomination in the eyes of the Lord, but a very present help in the time of trouble."

Ornithology is a subject on which town-bred children are not experts. Some children, however, know a thing or two about birds, as this anecdote shows:

"There is an amusing and, I believe, a true story concerning that wonderful dream of Jacob's and the angels going up the ladder to heaven. 'Please, sir,' asked one of the boys in the class to which the story was being rehearsed, 'why did the angels want to go up the ladder when they had wings?' This nonplused the teacher, who took a strategic movement to rear by saying, 'Ah, yes! Why? Perhaps one of the boys can answer that.' And one *did*. 'Please, sir,' said he, '*because they was a-molting.*'"

Dr. Macnamara vouches for the truth of the story that an inspector asked what was the meaning of W.H.S.B. (West Ham School Board), carved over the door of the school, and was informed it meant "What Ho! She Bumps." "The Peasants' Revolt," said another child, "was due to a shilling poultice [poll tax] put on everybody over sixteen."

"Who made the world?" snapped out a rather testy inspector, years ago, to a class of very small boys. No answer. Several times he repeated the question, getting louder and more incensed each time. At last a poor little fellow, kneading his eyes vigorously with his knuckles, blubbered out, '*Please, sir, it waddn' me.*'"

"Why is it," asked the inspector, "the sun never sets on the English possessions?" "Because," replied the ingenious one, "English possessions are in the north, south, and east, and the sun always sets in the west."

But, as a rule, children are better at definition than at explanation.

"The zebra is like the horse, only striped, and is chiefly used to illustrate the letter Z. (Also a donkey with a football jersey on.)

"The marriage customs of the ancient Greeks were that a man married only one wife, and this was called monotony."

## THE PERIODICALS REVIEWED.

### THE CENTURY MAGAZINE.

IN the second chapter of Mr. E. Hough's remarkably interesting papers on "The Settlement of the West," in the January *Century*, he says the new régime is inferior to the old in its development of the personal characteristics of the population.

#### THE NEW WEST AND THE OLD WEST.

"The old West begot character, grew mighty individuals, because such were its soil and sky and air, its mountains, its streams, its long and devious trails, its constant stimulus and challenge. That which was to be has been. The days of the adventurers are gone. There are no longer any Voices to summon heroes out on voyage of mystic conquest. It now costs, not so much heroism, but so much money, to get out into the West, and it costs so much to live there. As a region, the West offers few special opportunities. It is no longer a poor man's country, nor is any part of America a country good for a poor man. It is all much alike. Our young men of the West are as apt to go East to seek their fortunes as to try them near at home. There is no land of the free. America is not American. Food must digest before it can be flesh and blood, and our population must digest before it can be called American."

#### HUXLEY AS A LITERARY MAN.

In this number is printed the prize essay in the *Century's* competition for college graduates of 1900. Mr. James E. Routh, Jr., an A.B. of Johns Hopkins University, received the prize for his essay on "Huxley as a Literary Man." Mr. Routh makes the point that Huxley's great significance was not in the propounding of new doctrines, nor in the popularizing of science, but in the power which enabled him to construct workable theories of life and ethics out of loose truths.

#### COSTLY TRANSIT FOR LONDON.

Mr. Isaac N. Ford writes on "Electric Transit in London and Paris." He says that the "twopenny tube" of London has cost, when in full operation, three million dollars a mile. "If it had been a municipal undertaking, as in Paris, the capital would have been obtained at low rates, and there would have been enormous reduction in the cost of the work, which involves the only practical solution of the greatest social problem in the metropolis,—the rehousing of the millions."

### HARPER'S MAGAZINE.

FROM the January *Harper's Magazine* we have selected Dr. Henry Smith Williams' valuable account of "Experiments in Low Temperature" to review at greater length among the "Leading Articles." This number of *Harper's* has some especially notable pictures in color, those of Howard Pyle illustrating "North-Folk Legends of the Sea" being the most striking.

#### AN AMERICAN CHEOPS.

Mr. H. I. Smith, of the American Museum of Natural History, describes a curious monument of the American mound-builders which stands neglected and disinte-

grating very near the site where the city of St. Louis is preparing the World's Fair of 1903. This great Cahokia mound rises in terraces from a base 1,180 feet by 750 feet to a height of 102 feet, covering an area greater than that occupied by the Great Pyramid of Egypt. The mound is a truncated pyramid, and in its vast mass, Mr. Smith thinks, may lie wonderful stores of scientific treasures. He points to the fact that the entire archaeological exhibit of the State of Illinois at the World's Fair of 1893 was made up of pottery and weapons found in a single excavation not far from one of the sixty small mounds surrounding the great Cahokia pyramid. Mr. Smith suggests that this great mound should be exploited to give an incomparably interesting archaeological exhibit for the World's Fair of 1903.

#### HOW CULTURE CONSERVES BEAUTY.

Mr. Henry T. Finck, in his brief essay on "The Evolution of Girlhood," calls attention to the remarkable uniformity of the rule that girls lose their freshness at an earlier age as the stage of civilization and culture of the race recedes. The American Indian girls were in society at eight or ten, and were ready to think of marriage. By the time they were sixteen their freshness was gone, and there seemed to be no intermediate stage of young womanhood between sixteen and fifty. The thing is almost as strikingly shown in the negro race and southern races generally. The hard work and early marriages of backward races account for this striking difference as compared with Anglo-Saxon people. Mr. Finck comes to the conclusion that the matter of education is the greatest factor in the prolongation of woman's beauty and freshness. "By education I do not mean so much the lessons girls learn in school and college as the culture their minds receive by talking with other women and with men, and by reading newspapers, magazines, and books. In both kinds of education, the women of America are admittedly preëminent, and that is why Max O'Rell could write that even when one of these women is plain, 'she is always in possession of a redeeming something which saves her. . . . She looks intelligent—a creature that has been allowed to think for herself.'"

### SCRIBNER'S MAGAZINE.

"SCRIBNER'S" for January begins with the first article of the series which is announced as the most prominent attraction of the magazine in 1902,— "The American 'Commercial Invasion' of Europe," by Frank A. Vanderlip, former assistant secretary of the treasury. Mr. Vanderlip has been traveling in Europe, with letters which gave him access to the great men of the Old World, and has made a thorough study of his own country's sudden expansion into a commercial world power. He begins with the views expressed to him by the great Russian minister of finance, M. de Witte, who considers that England has been hard hit by the Transvaal war, but is still the richest country in the world; that France is without initiative, that Germany has gone too fast, and that "America has an unparalleled combination of natural resources and initiative, and will go on to greater achievements."

## AMERICA IN THE MARKETS OF THE WORLD.

Besides American manufactures of iron and steel, bridges, rails, locomotives, etc., Mr. Vanderlip says we are now gaining supremacy as makers of cloth, just as we have long held supremacy as a producer of cotton. "American cottons are finding their way into the markets of every country. They can be found in Manchester, as well as on the shores of Africa and in the native shops of the Orient. Bread is baked in Palestine from flour made in Minneapolis. American windmills are working east of the Jordan and in the land of Bashan. Phonographs are making a conquest of all tongues. The chrysanthemum banner of Japan floats from the palace of the Mikado on a flag-staff cut from a Washington forest, as does the banner of St. George from Windsor Castle. The American typesetting machines are used by foreign newspapers, and our cash registers keep accounts for scores of nations. America makes sewing-machines for the world. Our bicycles are standards of excellence everywhere. Our typewriters are winning their way wherever a written language is used. In all kinds of electrical appliances, we have become the foremost producer. In many European cities, American dynamos light streets and operate railways. Much of the machinery that is to electrify London tram lines is now being built in Pittsburg. The American shoe has captured the favor of all Europe, and the foreign makers are hastening to import our machinery, that they may compete with our makers. In the far East, in the capital of Korea, the Hermit Nation, there was recently inaugurated, with noisy music and flying banners, an electric railway, built of American material, by a San Francisco engineer, and now it is operated by American motormen."

## THE SENATE'S POWER IN TREATY-MAKING.

Senator Henry Cabot Lodge, in an article on "The Treaty-Making Powers of the Senate," expresses surprise that there should have been so much misapprehension shown in comments on the amendments to the Hay-Pauncefote Treaty concerning the functions of the Senate as part of the treaty-making power. Many people in America, and several of the English officials, seemed to think that it was an innovation that the Senate should presume to amend treaties initiated by the Executive. On the contrary, Senator Lodge shows, by examining the constitutional foundation of the clause and various precedents, that the Senate has a perfect right, not only to ratify or dismiss a treaty submitted to it, but to continue the negotiations by offering new or modified propositions. In fact, by looking up the history of our treaty-making, the Senator shows that there have been sixty-eight treaties amended by the Senate and afterward ratified.

That illustrations in color are not to be confined merely to special holiday demonstrations, is shown in the several features illustrated by color printing in this number of *Scribner's*. The most exquisite of these are the reproductions of the drawings of Henry Hutt illustrating Marguerite Merington's Christmas masque, "A Gainsborough Lady."

In an article on "Military Parades and Parade Training," David B. Macgowan says that the St. Petersburg parade is the most showy and effective in Europe. He notes, regretfully, that there is a "sprinkling of officers" in our own army who aspire to copy European smartness.

## M'CLURE'S.

THE January *McClure's* contains a delightfully fresh and lively description of an old subject in Mr. Cleveland Moffett's "In and Around the Great Pyramid." Mr. Moffett thinks the geographies and Mark Twain have made the pyramids cheaper than they should be. "There are tourists who arrive with a flippant 'Hello, Cheops, old boy!' There are others who give only tolerant interest, as if they had seen it all before. Yet many of both classes go away finally in reverent silence, wishing people had taught them less—or more—about the pyramids. For one thing, take the matter of dust and heat, in which the picture-book-makers have surely misled us, for do they not represent the pyramids as standing out on a burning waste, with only a naked palm tree every mile or so to keep the glare off, and individuals in queer hats gasping about, half smothered in the sand storms? As a matter of fact, the seven-mile drive from Cairo to Cheops comes off as pleasantly as a carriage ride out of Long Branch, and is over as good a road. The whole avenue, furthermore, is shaded by lines of acacias not a whit less inviting than those of the famous Bois de Boulogne, and so cool a breeze blows down them that you scarcely feel the sun." To cap the climax, a trolley road is just being completed to haul the tourist to Cheops.

## LORD ROSEBERY'S CHARM.

Mr. George W. Smalley, in his "Personal Reminiscences of Famous Men and Women," tells us, this month, something of Lord Rosebery, Mr. Balfour, Sir Henry Campbell-Bannerman, Mr. Asquith, and Sir Edward Grey. Of Lord Rosebery, Mr. Smalley says that the recrudescence of Liberalism has an intellectual versatility not inferior to Mr. Gladstone's. Lord Rosebery is the most attaching personage in private life. "Lord Rosebery has a manner, a voice, an address, and an expression (when he drops the mask of bored indifference he sometimes wears) to which no other word than beautiful is adequate. Men and women find him sympathetic because of this true beauty of nature. Good manners are from the heart."

## THE "MORSE" LANGUAGE.

Mr. L. C. Hall tells interestingly of the human characters and emotions an old telegrapher reads on the wire in his "Telegraph Talk and Talkers." It seems that the Morse system is a language in itself, to the expert, which reflects the personal characteristics of the person using it. Thus, when a Confederate scout cut a wire while a Union dispatcher was sending a message, and attempted to impersonate the proper receiver, he was greeted with derision by the trained operator, who detected at once the Southern characteristics of the interloper's "Morse."

## THE COSMOPOLITAN.

THE January *Cosmopolitan* contains a discussion by Mr. William T. Stead on "The Future of the English-Speaking World," and Mr. John Brisben Walker's analysis of President Roosevelt's Message to Congress, under the title "The Story of Theodore Roosevelt's Life."

Certainly a lively bit of autobiography is Mr. Elbert Hubbard's story of his life and of the Roycroft venture at East Aurora. Of the financial results of the Roycroft work, Mr. Hubbard says:



## ROYCROFTING AS A FINANCIAL VENTURE.

"The Roycroft Shop and belongings represent an investment of about two hundred and fifty thousand dollars. We have no liabilities, making it a strict business policy to sign no notes, or other instruments of debt, that may in the future prove inopportune and tend to disturb digestion. We began in June, 1895, with a capital of three thousand dollars. During 1897 and 1898, I converted certain real-estate holdings into cash and added thirty-one thousand dollars to the venture; but the net profits since beginning, six years and six months ago, have been something over two hundred thousand dollars, with a good living for everybody thrown in."

## FREE TEXT-BOOKS FOR PUBLIC SCHOOLS.

Dr. E. Benjamin Andrews advocates strongly the practice of providing public-school pupils with free text-books, and shows that the most advanced cities and States of the Union now regard this as an indispensable principle. "Wherever this has occurred, the number of pupils in attendance has increased, the average duration of pupils' attendance has lengthened, a greater number and proportion of pupils continuing their studies clear up to the highest grades, and the whole efficiency of the schooling has improved."

## EVERYBODY'S MAGAZINE.

THE excellent January issue of *Everybody's Magazine* begins with a character sketch of Lord Salisbury, by Mr. T. P. O'Connor, which we have quoted from at greater length in the department of "Leading Articles."

## THE FATE OF MISS STONE.

A timely feature of this number is the account by E. P. Lyle, Jr., of the capture of Miss Stone by the Bulgarian brigands, and of the people and the country around about where the captive is held. Mr. Lyle went as a special correspondent for *Everybody's* to Bulgaria to find out the facts. He thinks that it is not entirely impossible that Miss Stone may suffer the fate of other hostages, who have died shortly after being ransomed, and gives instances of such incidents. "Now that snow has fallen in the mountains, when brigands usually retire to villages for respectable citizenship during the winter, it is hoped that those holding Miss Stone will hasten the negotiations. Otherwise, they may keep her in a cave till springtime; or, again, harrowed by pursuit and rendered irritable by their own discomforts and perils, they may decide to end it,—that is, kill and escape."

## THE MOST NORTHERN PEOPLE.

There is a good description of "The People of the Farthest North," by Dr. Frederick A. Cook, and many handsome photographs of the most remote Arctic Eskimo people and their household gods. Dr. Cook tells us that these strange folks are, after all, very human. They have a deep sense of honor, a wholesome regard for the rights of their fellows, and a sympathetic temperament. Thefts are almost unknown, cheating and lying are extremely uncommon. Quarrels, though frequent, are restrained, because of a well-developed habit of suppressing all emotions. Morally, even when measured by our own standard, they are superior to the white invaders of their own country.

## AN INTERVIEW WITH LI HUNG CHANG.

Carl F. Ackerman gives, in the form of an interview with Li Hung Chang, had shortly before his death, the great Chinaman's forecast of China's future. The gist of Li's remarks were that China has been a great giant, helpless because she does not know of her strength; that the country is heartily sick of rioting and killing and robbing, and wants to settle down; that his people will learn the arts of civilized industry from the Europeans, but that it will take a long time. "We move slowly here, as we have for centuries; but the day is not far distant when our progress will be rapid as that of our neighbors across the Yellow Sea."

## LIPPINCOTT'S.

IN the January *Lippincott's* is printed an essay from the pen of the late poet and musician, Sidney Lanier, on "The Music of Shakespeare's Time," in which the interesting point is made that music is no "acquired taste" with Anglo-Saxons, notwithstanding the popular impression that its native soil is only to be found in romance and Teutonic countries. "It is perfectly true," says Lanier, "that in originating music, in what is called musical composition, we have not ever played a supreme part; but the popular love for music among English-speaking peoples has certainly been much underestimated. As to the popular attitude toward musical cultivation in the present day, you have but to cast a glance about you in order to see how many striking signs exist that even here in the United States there is a great under-passion for music already beginning to develop itself, although but a few years have passed since we were all fighting starvation, winter, and the savage too desperately to sing, save it might be a snatch between two strokes of the axe or two shots of the rifle." As this was written in 1879, there has been time and development to give further strength to the conviction. Lanier goes on to point the extraordinary fact that although Shakespeare died "a century before the epoch of really great musical art," there is a deep and almost adoring reverence for music lying everywhere revealed through his writings.

Mrs. Belloc-Lowndes describes, in "The Passing of the Pope," the imposing ceremonies that mark the death of a Pontiff and the installment of his successor; Louis Zangwill contributes a short story, "The Mother," and there is a complete novelette, "Naughty Nan," by John Luther Long.

## THE LADIES' HOME JOURNAL.

MR. JOHN E. WATKINS, JR., describes, in the *Ladies' Home Journal* for January, "How Uncle Sam Guards His Millions." The Treasury Department has handled about forty-five billions of dollars in the last forty years, and less than a quarter of a million has been lost, or about one-thousandth of 1 per cent. The Engraving and Printing Bureau, where the manufacturing of paper money begins, is the largest printing office in the world. At the side of each printing-press is a little indicator, like a bicycle cyclometer, keeping count of every bill printed. The manufacture of the paper is a most jealously guarded secret of the national government. A Massachusetts firm is paid forty-three cents a pound for it, and the work is done under the eyes of a government agent. The paper

is made of rags, and silk threads introduced into it by a secret process. "The sheets of paper, already counted twice and placed in uniform packages at the paper mill, are stored in a treasury vault and issued to the Bureau of Engraving and Printing as wanted. Before leaving the treasury, they are counted three times more, and the receiving official at the bureau must receipt for them. Then the bundles are unwrapped, and the sheets are counted twenty-eight times by a corps of women. This is to insure that each printer gets the recorded number—no more, no less. Before any employee of the division in which this paper is kept can leave for home, each night, he must exhibit to a watchman at the door a pass certifying that every fragment of every sheet passing through his fingers has been accounted for.

#### WHEN TREASURY PAPER IS LOST.

"If one sheet of this precious paper be lost, the entire force of men and women having access to the room where the misplacement has occurred are kept in, like so many school-children, to find it. Each sheet is issued from the vault for the printing of a definite amount of money upon it. If the lost sheet were intended to ultimately represent four thousand dollars' worth of notes, the group of employees to whom the responsibility of its misplacement has been traced must make good that amount if they cannot locate it within a reasonable time. The most expensive loss which has thus occurred was of a blank sheet issued for the printing of eighty dollars upon its face. The employees of the last room to which it was traced divided the loss among themselves. Such losses have several times occurred." Altogether, each bill made by Uncle Sam is counted sixty-three times.

#### RUDYARD KIPLING'S NEW CHILD'S STORY.

Mr. Rudyard Kipling has a new children's story, "My Personal Experience with a Lion," with photographs by the author. The lion in question was a little cub, given to Mr. Kipling while he lived in Africa, because he could not, in the opinion of the menagerie officials, be raised in captivity. Mr. Kipling's wife and children took charge of the little beast and pulled it through an anxious babyhood. The incident, told as Mr. Kipling knows how to tell it, makes one of the prettiest child stories we have seen for a long time.

Mr. J. F. Mitchell, Jr., tells about "James Whitcomb Riley's 'Home Folks,'" at Greenfield, Ind.; Cardinal Gibbons writes deprecatingly of "The Restless Woman," and Mr. Edward Bok prints some impressive reports from parents concerning the evil effects of overstudy.

#### THE WORLD'S WORK.

THE January number of the *World's Work* takes its cue from Mr. McKinley's phrase in his speech at Buffalo, "The era of exclusiveness is past," and attempts to give a picture of the world-wide commercial expansion of America. Mr. George H. Fitch, under the title "The New Pacific Empire," describes the significant beginnings of a great Oriental trade for America, showing that the quickest route from the Orient to England is now *via* San Francisco. Mr. Henry Harrison Lewis describes "The Adventures of American Goods Abroad," telling how the products of our mills are carried to various lands by camels, dog trains, canoes, jinrikshas, llamas, mule trains, and man power. He says

that even Korea, the Hermit Kingdom, is the scene of renewed activity in railway-building. A steamship line has been established between Odessa and the Persian Gulf, there comes news of electric lines in the Canary Islands, in China the wheelbarrow used some thousands of years is giving way to American rails and American railway appliances, and Alaska, right up to the Arctic Circle, has better transportation facilities than some of our States had a few years ago.

Mr. Gaillard Hunt, of the Department of State, advocates the reorganization of the consular system, making it a permanent service and dividing it into classes, so as to offer permanent careers to good men. Mr. Frederic Emory, with the title "Our New Horizon," analyzes the economic causes compelling expansion, and prophesies that the further profitable growth of our trade is dependent upon the broadening of exchange and the improvement of our consular service.

In "The New Farming and the New Life," Mary C. Blossom describes the model farm and farm school at Briar Cliff Manor, on the Hudson River, twenty-seven miles from New York, which was established about eleven years ago by Mr. Walter W. Law, a successful man of affairs. She thinks that the highly scientific methods of agriculture as investigated and taught at Briar Cliff Manor go far to prove that farming can be made to pay on land in the Eastern States that has no particular advantages except proximity to a market.

#### COUNTRY LIFE.

IN the January number of the beautiful new magazine, *Country Life*, Emma Shafter Howard writes on "Women Who Win Their Living from the Land," and tells of an organization aiming to aid those women who want to become farmers in California. She gives some remarkable stories of the success of women who have won charming homes and profitable farms for themselves on the Pacific coast.

#### NATIONAL IRRIGATION WORK.

Prof. L. H. Bailey, the editor, considers, this month, the irrigation problem of the West, which is treated so fully in this number of the REVIEW OF REVIEWS by Mr. William E. Smythe. Mr. Bailey thinks the cost of adequate irrigation is too great even for States, in many instances, and that the national government should take hold, appropriating funds to start the work, applying them first to those areas most in need. As to water rights, he thinks the State property must be respected, the State controlling the appropriation and distribution of its non-navigable waters, the profit coming in the building of the nation. "There should be federal aid with State autonomy."

#### A GREAT CALIFORNIA RANCH.

Mr. Charles Howard Shinn gives "The Story of a Great California Estate," the Rancho Chico, home of the late Gen. John Bidwell. The owner came to California in 1841, and was not tempted by the gold excitement to abandon his faith in the agricultural future of California. By 1858, he had 450 acres under the plow, the marvelously fertile soil producing, in some cases, more than seventy bushels of wheat to the acre. The ranch was finally brought up to 26,000 acres, and became a superb estate. Now there are 1,630 acres of bearing orchard, about 8,000 acres sown to wheat and other crops, and 12,000 acres in profitable use for stock range.

## THE ATLANTIC MONTHLY.

MR. JOHN B. CLARK constructs, in the January *Atlantic*, a chapter of "Recollections of the Twentieth Century," and prints a paper purporting to have been read at the meeting of the New York Historical Society at the opening of the twenty-first century. Among the things which his imagination finds archaic a hundred years hence are rifles and cannon and warships, slums, and the wasteful burning of coal to make steam. Manhattan Island has streets in several stories, the farmers outside the city are tilling the land with gangs of rotary plows run by electricity obtained from the electric currents generated within the earth itself. But greater than these and other material developments of the twentieth century the author considers the democratizing of our institution of property. The monopoly problem was solved by the simple expediency of forcing the trusts to sell at the same price to everybody. "If the great corporation, in order to cut prices in its section of the country, were compelled to cut them everywhere, it could not keep up the war longer than its rival could." Hence, independent producers could not be crushed, and monopoly was impossible.

## SOUTHEY'S OPINION OF RICHARDSON.

In an interesting collection of "Some Southey Letters," edited by H. S. Scott, one finds a trenchant criticism of the novelist Richardson. Southey says: "My own opinion of Richardson is—that for a man of decorous life he had a most impure imagination, and that the immorality of our old drama is far less mischievous than the moral stories of 'Pamela,' 'Squire Booby,' and 'Clarissa.'"

## THE NEW POWER OF THE NATIONAL COMMITTEE.

Mr. Rollo Ogden calls attention to the "New Powers of the National Committee." He shows how the Democratic and Republican national committees have quietly assumed authority from time to time, until they are absolutely new institutions as compared with those of fifteen or twenty years ago. The change began to be sharply marked in 1884, owing to the personality of the Democratic chairman, Senator Gorman. After 1892, there came a pause, and then, in the person of Senator Hanna, the growth of the National Committee reached its culmination. Not only did Senator Hanna have about seven million dollars to disburse in 1896, and probably more in 1900, money which he himself collects and he himself expends,—there is an almost complete mastery of party machinery in the hands of the National Committee. To "call" the national convention has come to be about the same thing as deciding who shall be called. Mr. Ogden says that Senator Addicks, hopelessly defeated in Delaware, was able to regain his lost position by simply making terms with the chairman of the Republican National Committee,—this as an illustration of what a party chairman can do nowadays.

## THE FORUM.

FROM the contents of the December *Forum* we have selected the articles on "Private Property at Sea" and "Reciprocity and Foreign Trade" for review and quotation in our department of "Leading Articles of the Month."

The article holding first place in this number is a discussion of "The Status of Religion in Germany," by Prof. Rudolf Eucken, at the University of Jena. Con-

trary to a prevalent impression, Dr. Eucken asserts his belief that the prevailing pessimism in Germany, so far from retarding religion, has really prepared the way for religious progress, in so far as it has tended to destroy that complacency which is to be regarded as a foe to all religion. Dr. Eucken says that the disappointments which the developments of modern culture have introduced have been instrumental in again awakening a susceptibility to religious influences. In spite of the changes and conflicts in popular beliefs, religion, in Dr. Eucken's opinion, is still a very powerful factor in German life.

## ETHICS OF THE LAST CHINESE WAR.

The Rev. Gilbert Reid, undismayed by the numerous attacks made upon his ethical position as set forth in a *Forum* article of last July, returns to the subject of the Chinese war, and to a consideration of the ethics of the conflict. He thinks that China was right in resisting the inroads of foreign nations, but wrong in failing to distinguish between friendly and hostile nations, and in failing to recognize her friends among individual foreigners; in failing to protect non-combatant private subjects of even the nations upon whom she was waging war; in attacking the legations and their official representatives; in plotting to kill those of her own people who, as officials, had tried to prevent war, or, as private subjects, had under the law accepted Christianity; and in pandering to the lawlessness and atrocities of the Boxers, and incorporating them as a part of the government.

## STATISTICS OF SOUTHERN LITERACY.

In an article on "Sufrage, North and South," Director Merriam, of the Census, gives the figures of illiteracy for the colored race in several of the Southern States. In Alabama, 72.2 per cent. of the colored people were illiterate in 1890, and in 1900 the number was reduced to 59.5 per cent. in Virginia, Director Merriam states that the reduction was approximately a little over 14 per cent., and that in Mississippi it was the same; while throughout the five Southern States containing the largest aggregate population the average reduction was about 13 per cent. This is, indeed, a hopeful gain in the number of those who can read and write.

## OTHER ARTICLES.

The Hon. Robert Hutchison writes on "The Spanish Treaty Claims Commission: A Rejoinder;" Mr. Henry L. West gives a forecast of questions that will occupy the present session of Congress; Mr. Joseph Sohn writes on "The Empire of Islands;" Superintendent of Public Instruction Schaeffer, of Pennsylvania, discusses the "One-Sided Training of Teachers;" Mr. George F. Babbitt describes "Licensed Gambling in Belgium;" Mr. Charles Truax writes on "The United States Consular Service," and Mr. Joseph M. Rogers outlines "Lessons from International Exhibitions."

## THE NORTH AMERICAN REVIEW.

NEARLY fifty pages in the December *North American* are devoted to a discussion of the steps that may be taken by Congress for the protection of our Presidents against assassination and the suppression of anarchism. Gen. Lew Wallace proposes to expand the present definition of treason, as contained in the Con-



stitution, so that it shall include, besides the levying of war against the United States, and the "adhering to their enemies, giving them aid and comfort," the feloniously taking or attempting to take the life of the President or of the acting President, and agitation, conspiracy, or organization to subvert the Government of the United States, or to hinder or obstruct its operation. The punishment for taking, or attempting to take, the President's life should be death. For the other forms of treason, the penalty may be declared by Congress. Senator Burrows, of Michigan, shows that a remarkable gap exists in American legislation, both State and national, on the subject of anarchism. Efforts made in Congress, from time to time during the past twenty years, to pass restrictive, not to say repressive, legislation dealing with aliens of anarchistic tendencies have resulted only in failure. And yet the constitutional power of Congress to legislate on this subject is undoubted. The Hon. Edgar Aldrich, United States district judge for New Hampshire, submits a tentative draft of a bill prescribing the death penalty for killing, or assaulting with intent to kill, the President, or person in line of Presidential succession, or for inciting others to the deed. Ambassadors and ministers from foreign countries, resident at the capital, are also to be protected from violence. Provision is made by the bill for the punishment of conspiracy and agitation against government, and for the suppression of every form of anarchistic utterance. His Excellency the Duke of Arcos, Spanish minister to the United States, makes several suggestions looking to the international control of anarchists, which he regards as entirely feasible.

#### A PLEA FOR THE CHINESE IMMIGRANT.

Joaquin Miller sends from his California home an emphatic protest against the proposed extension of the Chinese exclusion law. He declares that he never saw a drunken Chinaman, nor a Chinese beggar, and that lazy Chinamen are unknown and unheard of. Mr. Miller states that when he sat as county judge in Oregon, in a county where more than half of the mining property was Chinese, there was not in four years' time a single criminal case involving a Chinaman.

#### AËRIAL NAVIGATION AGAIN.

Rear-Admiral Melville, engineer-in-chief of the United States navy, writes in a somewhat despondent tone on the prospects of aërial navigation. The fact that M. Santos-Dumont can round the Eiffel Tower and return to St. Cloud on a calm day has only the slightest significance when it is considered that such a journey is impossible on many days, that it is always attended with danger, and that it can be of little or no profit to any one to make such a tour. Admiral Melville is convinced, after a consideration of the physical and mechanical facts involved, that there is no basis for the optimistic statements that commonly pass current as to the success of the dirigible balloon or the flying-machine, either for commercial transportation or in war.

#### OTHER ARTICLES.

Prof. N. S. Shaler writes on "The Proposed Appalachian Park," Secretary Lyman J. Gage on "Customs Inspection of Baggage," Marrion Wilcox on "The Opportunity of the Roosevelt Administration," Mr. W. H. Baldwin, Jr., on "Publicity as a Means of Social Reform," Mr. H. C. McLeod on "How to Secure an Elastic Paper Currency," Mr. Arthur Houghton on

"The Spanish Debt," and Mr. W. D. Howells on "A Psychological Counter-Current in Recent Fiction."

In our department of "Leading Articles of the Month" we have quoted from the article on "Cuba's Imminent Bankruptcy," by Edwin F. Atkins, and from Mr. Walter Wellman's article entitled "Shall the Monroe Doctrine be Modified?"

#### THE ARENA.

WE have quoted elsewhere from the Rev. Hiram Vrooman's account of "The Coöperative Association of America," which appears in the December number of the *Arena*.

In the same number, Gen. C. H. Howard, of Chicago, gives the history of the recent controversy between the Post Office Department and the publishers of periodicals included in mail matter of the second class. The controversy arose over rulings of the department applying to the practice of offering premiums for subscriptions. The principal publishers of the country have protested that a discrimination against this practice would be detrimental to the circulation of periodicals now legitimately included in second-class mail matter. This leads General Howard to raise the question whether it is second-class matter that really causes the postal deficit each year. He has reached the conclusion, after careful investigation, that the business growing out of second-class matter in this country,—that is, the postage paid on first, third, and fourth class matter directly traceable to that of the second-class matter,—is so much increased as in reality to diminish the deficit. In other words, the second-class matter, in view of all receipts caused by it, is a factor in reducing the deficit of the department. The causes of the latter, therefore, must be sought elsewhere, as in the carrying of franked mail matter, the exorbitant cost of carrying the mails, in many instances, and other like expenses.

#### PRESENT-DAY RELIGION.

There are three articles discussing various phases of modern religion and theology. Mr. J. Buckley Bartlett writes on "Christian Leadership and Economic Reform." In Mr. Bartlett's opinion, the supreme end to be served by religious leadership in the present crisis is the education of the people as to principles. Mr. B. O. Flower, in a paper on "Revolutions in Religious Thought During the Nineteenth Century," outlines the various changes in religious and theological beliefs as shown in the teachings of religious leaders. Mr. Walter Spence analyzes the effect produced on religious and theological thought by the doctrine of evolution.

#### GUNTON'S MAGAZINE.

IN *Gunton's Magazine* for December there is a discussion of the reciprocity agitation, from which we have quoted in another department.

Dr. Charles De Garmo asks the question, "Can Education Restore What City Life Has Lost?" Dr. De Garmo predicts that the city school of the future "will not content itself with pouring knowledge into the pupil as a passive recipient, but it will arouse all his native energy by offering him a complete and blended expression of his active intellectual and motor powers through a long series of occupations. These occupations will embrace extended exercises in all respects of manual training, cooking, sewing, textile industry,



drawing, music, and, later, laboratory practice in the sciences."

#### WHAT CUBA WANTS OF US.

Mr. L. V. De Abad, commissioner to the United States representing the economic associations of Cuba, in an article on the Cuban problem, says that Cuba is not asking for free trade, as free trade would be not less ruinous for Cuba than for the United States, both economically and financially. "Economically, because there might happen to Cuban tobacco what has just happened to Porto Rico coffee; and financially, because her revenues would not meet the expenses of her government. She needs a customs tariff which, while being moderate, would yield sufficient revenue to meet her expenses."

#### FAILURE OF THE RUSKIN COLONY.

Mr. Walter G. Davis explains the failure of the Ruskin Colony in Georgia on the ground of the laziness resulting from communal life. This tendency toward indolence was given by W. H. Channing as the reason for the failure of Brook Farm, of which community he was a member. And yet Ruskin was far from being a thoroughly socialistic colony. "There was not even a common dining-table, in one sense of the word, because at one time some fifty of the families in the colony ate at their private tables. Even in their general dining-room, some would bring things in their pockets which the others would not, or at least did not, have. Taken as a whole, then, Ruskin, during the only one of the three periods of its history when it could be termed successful, was considerably more capitalistic than it was socialistic."

#### THE CONTEMPORARY REVIEW.

AN important feature of the *Contemporary Review* for December is M. de Bloch's elaborate paper on "Militarism and Lord Roberts' Army Reorganization Scheme."

#### THE NEW REIGN IN ITALY.

Mr. Bolton King writes a very interesting article, full of the joyous spirit of optimism, concerning the change which has taken place in Italy since the accession of the new king. He quotes with approval the statement that Bresci, if he shortened King Humbert's life by ten years, gave a century of life to the Italian monarchy. The King and the Extreme Left support the present ministry in power, and the present ministry, according to Mr. King, persists in giving liberty, for the first time, a fair trial in Italy. The labor unions, both among workmen and peasants, are bearing a plentiful crop of strikes; but drunkenness is diminishing, school attendance is better, and the workmen have gained both financially and in self-respect. They have succeeded in some places in compelling employers to grant holidays on election days, while in others the weekly wages are collected by the unions from the employers and divided equally among all members, the old and the able-bodied sharing alike. The Socialists have undertaken the organization of these unions for the most part, and ministers have refused to allow that fact to induce them to listen to the plea for measures of repression. The Socialists and the Radicals support the Giolitti ministry, and have rallied to the side of the monarchy, now that they have a monarch upon whose loyalty they can depend.

#### JOURNALISM FOR UNIVERSITY MEN.

Mr. F. S. A. Lowndes writes a short but intelligent paper concerning journalism as a career for young university men. It is a well-informed appreciation of the advantages and disadvantages of a journalistic career. There are not many facts in the paper which call for notice, but it is true that the average rate of a war correspondent's salary is \$400 a month, with a pension of \$1,500 a year to the widow if the correspondent is killed or dies in the service of his paper; and are war correspondents in the piping times of peace retained at \$100 to \$125 a month?

#### OTHER ARTICLES.

M. de Soissons writes somewhat enthusiastically about Maxime Gorki, the new Russian novelist, and Mr. Raymond Maxwell, a doctor in charge of a Boer ambulance in Natal, contributes a diary of the campaign which occupies over thirty pages.

#### THE NINETEENTH CENTURY.

WRITING in the *Nineteenth Century* for December, Mr. W. H. Mallock proclaims himself, if not altogether converted to the truth of the Bacon-Shakespeare cipher, at least very much disposed to believe in the theory of the word cipher, at which two Americans, Dr. Owen and Mrs. Gallop, have been working for some years. It is impossible to explain this mysterious cipher in the space at our disposal, but the gist of the theory is that Shakespeare's plays are really a kind of "Pepys' Diary," written by Bacon. This cipher conceals the statement by Bacon that he was the son of Queen Elizabeth by a private marriage with Leicester; that the Earl of Essex was his brother; that he was educated in France, where he fell in love with Marguerite, the wife of Henry of Navarre; and that he wrote "Romeo and Juliet" to commemorate this love affair. Mr. Mallock says: "To make this demonstration conclusive in the eyes of the world generally would, no doubt, demand some time and labor;" but he unhesitatingly affirms that there are sufficient *prima facie* grounds for undertaking the inquiry.

#### HOW TO SUPPRESS PROFESSIONAL CRIME.

Sir Robert Anderson returns to the charge, and repeats once more his conviction, based on definite facts and a knowledge of the personnel of the criminal fraternity, that it would be easy to put an end to organized crimes against property in England. His proposal is simple. Whenever an habitual criminal is convicted of an offense against property, he would order a full and open inquiry to follow upon the basis of his record as known to the police, and if it is proved that he resorts to crime deliberately and systematically, he should be sent to an asylum-prison for the rest of his life, on condition that if he truly repents and makes full disclosure of what he has done with the property he wrongfully obtained he shall be liberated.

#### AN ENGLISH SCHOOL OF AGRICULTURE AND INDUSTRIES.

Lady Warwick writes an article describing a school which she has established at Bigods, in Essex. In addition to the ordinary subjects, some fifteen hours a week are devoted to chemistry, physics, and botany; and the real work of observation is carried on by the pupils themselves in the laboratories and fields. Boys and

girls are taught together, the boys receiving instruction in wood and metal work by way of manual training, while the girls are taught needlework, cookery, and domestic economy. In the last two years the pupils receive a more distinctly agricultural and industrial training. There is a model dairy, an experimental garden, a miniature farm, a poultry run, and a carpenter's shop. A similar school has been established at Bruton, in Somerset.

Lady Warwick speaks very highly of the happy family life which the boys and girls lead at Bigods, and thinks that excellent results would follow from the general establishment of such schools throughout the country.

#### A PLEA FOR A NATIONAL THEATER.

Mr. John Coleman appeals to the London County Council to establish a national theater in London which would afford accommodation for 2,500 persons and be fitted up with all the best apparatus and organized so as to form a regular school of dramatic art. The building, with the site, he thinks, will cost \$1,000,000, which could be borrowed by the County Council at 3 per cent., and a subsidy to guarantee working expenses would not exceed \$75,000 a year.

#### A DEFENSE OF THE DISTRESSED.

Mr. J. G. S. Cox, in an article entitled "Why the Religious Orders Leave France," combats the plea of Mr. Wilfranc Hubbard that the expulsion of the religious orders was necessary, owing to their intrigues against the republic. Mr. Cox maintains that few laymen had better or more intimate opportunities of forming an opinion as to the methods of the Society of Jesus. He has come to the conclusion, after watching their work in France and elsewhere, that they mix, not too much in modern politics, but too little. It may be a great surprise to the reader, he says, to learn that a Jesuit never goes to the poll, that he is pledged not to canvass at elections, that he never discusses political questions, even in the privileged sanctity of the recreation-ground. What is struck at by the new law is not freedom of teaching only, but also liberty of thought,—the right of the Christian parent to choose a school for the children about his knees.

#### THE FORTNIGHTLY REVIEW.

WE have quoted at length from "Calchas" paper on "The Crisis with Germany," and from Mr. Sydney Brooks' "Aspects of the Monroe Doctrine," in the *Fortnightly* for December.

#### LI HUNG CHANG.

Mr. Demetrius Boulger has a paper entitled "Li Hung Chang—Statesman or Impostor?" which questioning title he answers by saying a good deal of each. The one great period of Li's political life was the part which he took in the suppression of the Tai-Ping rebellion. The weak side of his policy was shown in his dealings with Korea, and by his blundering into war with Japan. After that Li fell away from England and went over to Russia, and that, naturally, according to Mr. Boulger, showed his incapacity and wickedness. Li's death was therefore opportune for his country, as Mr. Boulger says there is no official remaining who will be useful to Russia. But Li, with all his failings, was the one minister of China with whom it was possible to conduct business.

#### THE FRENCH ASSOCIATIONS BILL.

Mr. Richard Davey contributes, under the title of "A Few More French Facts," another interesting but rather scrappy article. He has little sympathy with French secularism.

"The associations bill, to my mind, and I should think to that of every liberal-minded Englishman who has examined the question impartially, is a very unjust and illiberal measure; for surely in a country which boasts of its freedom, and in an age when men can openly express their opinions, be they ever so eccentric, and even dangerous, it is almost incredible that a certain class of respectable citizens should be treated as pariahs because they elect to live in community, wear a distinctive habit, and pass their lives in study, prayer, and works of charity."

#### ENGLAND'S NAVAL REQUIREMENTS.

Mr. Archibald Hurd has a paper entitled "Missing British Cruisers." He maintains that the British cruisers have fallen behind in regard to speed, not to say number. England is now building battleships swifter than her cruisers, and cruisers as powerful as many of her battleships. She has done nothing to equal the best foreign cruisers in speed. The following is his conclusion:

"Presuming that (a) we are able to utilize 20 armed merchant cruisers, (b) press into service a similar number of the best of our gunboats and lightships, and (c) do the best we can with the 36 old cruisers of slow speed, we might be said to have 167 cruising ships for war duties. This is a most liberal calculation.

"On the other hand, if hostilities occurred early next year, what would be our needs? The three admirals in 1899 stated that the proportion should be a cruiser to a battleship when blockading; Lord Charles Beresford would have the proportion three to one. We have 47 battleships practically ready, and on Admiral Hornby's estimate we want 186 cruisers for the protection of our commerce, or a total of 233. The deficiency revealed is 64 cruising ships. If we assume that these admirals, the most distinguished then serving their sovereign, have grossly exaggerated our requirements, no allowances can entirely efface the conclusion to which their estimates lead us—estimates, moreover, which have been confirmed by the annual maneuvers each year, and are in agreement with all the lessons deduced from naval history."

#### THE NATIONAL REVIEW.

THE most important article in the *National Review* for December is one by Captain Mahan entitled "The Influence of the South African War Upon the Prestige of the British Empire." Captain Mahan does not believe England has lost any prestige, but says that, on the whole, the war has materially strengthened the British empire. There is, he says, abundant criticism of detail, but on the other hand the difficulties were very great. Captain Mahan compares England's difficulties over the Boers with the difficulties of the United States over the Indians, the Boers having all the advantages of the Indians combined with the brains of the white man. But, strictly speaking, Captain Mahan's argument is not that England has not lost prestige, but rather that she did not do anything to lose it. He admits that most people do regard Great Britain as weaker than before, while denying that they have cause for it—but that,

after all, is loss of prestige. Captain Mahan hopes that the Boer language will disappear from the British empire.

#### ENGLAND AND RUSSIA.

An anonymous article enumerates "Some Consequences of an Anglo-Russian Understanding." Some of these consequences are as follows: Improvement of relations between Italy and France, the improvement of Austria's position in the Balkans, and her emancipation from German influence, and so on; while England would be able to prevent German aggression in China.

#### WHITE AUSTRALIA.

The Hon. W. Pember Reeves, agent-general for New Zealand, writes on "The Exclusion of Aliens and Undesirables from Australasia." He puts the Australasian point of view lucidly, but without saying anything very new. The advantages of white labor on the plantations are that it is cheap and regular. But though the work is heavy for whites, it is absurd to suppose that it is impossible, and there are plenty of small cane farmers in the tropical districts who do all kinds of outdoor work. But of course they demand the white man's wages, and the supply is irregular,—those are the difficulties.

#### FREEDING THE HOUSE OF COMMONS.

Mr. J. Parker-Smith, M.P., has an article under this title in which he lays it down as a principle that it is upon ancient habits of freedom and the force of public opinion that the British constitution rests, and that the constitution will never be saved by artificial checks and limitations. Unless this principle be insisted upon in the coming revision of the rules, no tinkering with minor points of procedure will be of avail.

#### OTHER ARTICLES.

Mr. Asquith's address on "Biography" is republished; Sir Charles Warren writes upon discipline; Sir Godfrey Lushington has a paper on "Trade-Unions and the House of Lords."

#### THE MONTHLY REVIEW.

PERHAPS the most interesting article, to the general reader, in the *Monthly Review* for December will be Mr. Andrew Lang's "Magic Mirror and Crystal Gazing." Mr. Lang retails a number of experiments made by himself and by friends for whose good faith he can vouch, his conclusion being that "crystal-gazing has yielded apparent traces of the existence of unexplored regions of human faculty." How to read crystals he explains as follows:

"It is best to go, alone, into a room, sit down with the back to the light, place the ball, at a just focus, in the lap on a dark dress or a dark piece of cloth, try to exclude reflections, think of anything you please, and stare for, say, five minutes at the ball. That is all. If, after two or three trials, you see nothing in the way of pictures in the ball (which may seem to vanish, leaving only the pictures), you will probably never succeed. But you may have acquaintances who will succeed. If you or your friends are successful, you would oblige by making contemporary notes. If anything like pictures correctly representing what is, unknown to you, in the mind of a sitter appears, or if events are represented which later prove to have been actually occurring, the sitter, or other witnesses, ought to write down and sign their statements."

#### COLONIAL IMPERIALISM.

Mr. C. de Thierry writes on "The Crown and the Empire," his object being to show that genuine imperialism is a colonial product primarily, and has a much older and truer history than British imperialism. He says:

"The Conservative sneers at the imperialism of the Radical, as well he may; the Radical shouts Jingo at the Conservative, and assures an electorate, which refuses to be charmed, that, unlike the bastard imperialism of the Conservatives, the imperialism of the Radical is sane and unaggressive. This suggests the presence of Codlin and Short interest, not the presence of genuine emotion. As a matter of fact, neither party sees imperialism in true perspective. To the one it is a creed to believe in but not to practise, to the other it is anathema. What it really is, only colonials and imperial Englishmen fully understand. To the men who argue about it, the glory of the thing itself has never been revealed. Their eye has never glistened at the sight of the union jack; their soul never thrilled at the sound of the national anthem; their heart never hungered for the familiar associations of home; their loyalty never been stirred to passion by a visit to the cradle of the race for the first time."

#### THE "COBRA."

An anonymous writer takes exception to the finding of the *Cobra* court-martial,—that the vessel broke in two from structural weakness. He points out that there was never any good evidence adduced to prove that the destroyer could not have struck upon a sunken wreck or a temporary shoal. The diver's evidence was inconclusive, and as the dragging for a submerged wreck failed to find the after part of the *Cobra* itself, it might easily have missed any other obstruction. Such occurrences are, of course, improbable; but the breaking up of the ship from inherent weakness is equally improbable, and no sufficient evidence was brought to prove or disprove any of these theories.

#### OTHER ARTICLES.

The editorial deals with "National Fog," but does not give any clear idea as to how it is to be dispelled. Mr. Cloudesley Brereton gives us "A Bird's-Eye View of Education in America." Mr. George Calderon contributes a translation of one of the Russian *bilini*—a translation which gives more of the spirit of the original than is usual in such renderings. The art article deals with "The Symbolism of Signorelli's Pan," and it is as well illustrated as usual. Mr. W. A. Baillie-Grohman describes Gaston de Foix's hunting book, "La Chasse." Here also the illustrations are excellent.

#### THE WESTMINSTER REVIEW.

ONE of the most interesting articles in the *Westminster Review* is by A. Edmund Spender upon "Alfred Nobel: His Life and His Will." Mr. Spender says that M. de Bloch made a strenuous effort to induce the Emperor to nominate Björnstjerne Björnson for the peace prize. He says that an outlay not exceeding 25 per cent. of the prize is to be spent in establishing a Nobel library for the collection of books which may assist the judges to secure a ready reference to works to which the essayists may allude, and to help them in the translation of such compositions as may happen to be written in a special language. Translators can be engaged, if it is found necessary.



Mr. William Diack writes a very appreciative notice of the poetical work of Edward Carpenter. Mr. Diack regards Whitman as a "perennial fount of life and lordly vigor," but he places Carpenter only a little lower in the ranks of modern teachers. Indeed, he ventures to call him "the Walt Whitman of England."

There is an article by W. S. Cohen, entitled "Help to Ruined Farmers in South Africa," which gives an account of the way in which the people of Silesia were helped back into prosperity after the Seven Years' War. Its central feature was the rebuilding of houses, the distribution of seed and horses, and the discharge from all taxes for six months. Over and above this, there was established the Land Bank, which was the forerunner of the land-mortgage banks that are doing such good work in various parts of the Continent.

Mr. H. M. Vaughan puts in a plea for an Anglo-French

alliance, in which he suggests a scheme of settlement consisting of the following heads:

"1. In Newfoundland, full and satisfactory compensation for all French claims.

"2. A free hand for France in Morocco.

"3. Ditto in Tripoli, with reserve of existing rights of Turkey or Italy—which is a contradiction in terms.

"4. In Further India, saving the independence of Siam.

"5. To give way on any small points of dispute in western Africa, in Madagascar, or any islands of the Pacific.

"6. A firm and unchanging support of the French republic, and stern disavowal of all pretenders for its overthrow."

There is also a long paper by J. M. Attenborough upon the eighteenth-century deists.

## THE CONTINENTAL REVIEWS.

### REVUE DES DEUX MONDES.

IN the first November number of the *Revue des Deux Mondes*, the place of honor is given to Lieut.-Gen. Den Beer Poortugael's analysis of the annexation of the two republics, and of the recent South African British proclamations. This article is interesting in view of the fact that hitherto the *Revue des Deux Mondes* has taken scarcely any notice of the Transvaal war.

The writer begins by giving the text of Lord Roberts' various proclamations, notably those dated May 24 and September 1, 1900. After briefly alluding to Lord Roberts' formal declaration in the autumn of 1900 that the war had come to an end, and that only guerrilla warfare was to be feared in future, the general gives the text of Lord Kitchener's proclamation dated August 6, 1901. As might be expected, the foreign general completely denies the right of Great Britain to make an act of annexation before the country so declared to be annexed has been actually conquered, and not simply conquered on paper. He quotes the precedent of the insurrection of certain South African states against Spain in 1824, when Lords Liverpool and Lansdowne, Canning and Mackintosh, four great English statesmen, declared that no act of annexation could be considered until conflict was at an end.

### INDUSTRY, DEMOCRACY, AND THE STATE.

M. Benoist continues his remarkable series of articles with one on the legislation relating to labor. Beginning with that epoch-making year, 1848—when, as he says, the economic revolution and the political revolution joined together, and when the miserable populace became by means of the suffrage the legislating populace—M. Benoist traces in detail various laws which have been passed with a view to regulating labor, until he comes down to the striking conference which the German Emperor assembled at Berlin in 1890. It was not a question of obtaining from the conference a sort of common form of labor legislation for all the powers, but the object was that a national labor legislation in conformity with the views of the majority of the delegates might be the indirect result, in each country represented, of the deliberations of the conference. Certainly, the conference did not afford any positive results; it did not establish a new order of jurisprudence,

and quite failed to add to the international law of Europe an appendix of an international right of labor. At the same time, we must not consider that it was absolutely in vain; it was something, not only that the German Emperor took so bold an initiative, but also that so many states were actually represented at the conference. At any rate, the attempt was made to set against the revolutionary internationalism an internationalism of orderly government.

### SPAIN AND THE SOUTH AMERICAN REPUBLICS.

M. Ebray discusses the signs of reconciliation between Spain and the Latin republics of South America. From his point of view, the tentative efforts put forth on either side of the Atlantic with a view to not exactly an alliance, but an understanding of a very friendly kind between the United States and Great Britain, have their exact analogy in a certain improvement in the relations between Spain and the states which were once her colonies. The parallel, however, does not go far, in M. Ebray's view, for, while the movement for an Anglo-Saxon understanding has, according to him, failed owing to the reserve of the United States, the Spanish-American propaganda has produced a visible result; at any rate, the congress which sat at Madrid a year ago in order to discover the basis of a *rapprochement* between Spain and her old colonies of America was visible enough, and the movement is particularly interesting from the point of view of the United States' foreign policy,—in fact, M. Ebray sets before us a Spanish-Americanism as opposed to Pan-Americanism. Now, this Spanish-Americanism movement was begun by private enterprise, and did not enjoy the encouragement of the governments concerned until it had been already organized. Naturally, the movement is not one of sentiment alone. There are about forty-four millions of Americans of Spanish origin, and between them and the eighteen millions of European Spaniards there exists a bond, not only of a common race, but also of a constant stream of emigration from the Iberian Peninsula to South America. The promoters of the movement naturally hope that the commercial links which these figures imply may in time produce a political and moral cohesion, whatever that may mean.

M. Ebray also notices the correlative *rapprochements* between the different Spanish-American repub-



lies of the New World. He devotes many pages to discussing the programme of the Spanish-American Congress in Madrid, and he naturally discusses the effect of this movement on Italy and France. Italy, he says, is principally concerned with the enormous number of emigrants that she sends to South America, and it is difficult to see how Spanish-American *rapprochements* would compromise that interest. To France, however, the question is more complex, owing to her important commercial interests in Spanish America; M. Ebray considers that France could use the movement in order to bring the Spanish-American republics within the sphere of her intellectual attractions.

#### REVUE DE PARIS.

THE *Revue de Paris* is lively and entertaining, as usual, and its articles are not, as a rule, so long as is the fashion in some of its contemporaries.

#### THE SULTAN AS A FINANCIER.

Apropos of the recent difficulty between France and Turkey, M. Gaulis makes an interesting contribution to the first November number. He begins by telling us that some years ago, during the Armenian massacres, a man who was in a position to know prophesied, not once, but many times, that the powers would never enter into a conflict with the Sultan except on matters of business, and that the Sick Man of Europe would only die of his bad finance. The Franco-Turkish difficulty, when for the first time since the Peace of St. Stefano one of the great powers broke off diplomatic relations with the Sultan, formed a striking fulfillment of this prophecy. Abdul Hamid has certainly afforded Europe more than one opportunity for a searching examination of conscience, so much so that little by little, ever since the Treaty of Berlin, a new dogma—that of the inviolability of the Sultan rather than the integrity of the Ottoman empire—has come to be accepted by Europe.

Turkey is a rich country, and yet the Turks have never acquired financial aptitude, and Abdul Hamid himself is from this point of view more Turkish than any of his subjects. Financiers with whom he condescends to discuss the sources of a loan, or some railway concession, are wont to leave the palace in a state of absolute despair. Fanatic Turks accuse the West of having corrupted the Ottoman empire; but the true corrupter is the imperial palace, whose methods are imitated all through the official hierarchy. The war in South Africa had a great effect upon the Sultan; he feared some movement on the part of his own subjects, and for two years he refused all mining concessions. The regular deficit in the Turkish finances appears to be from \$10,000,000 to \$12,500,000 every year; and at the beginning of this year it represented an accumulated deficit of \$55,000,000. In M. Gaulis' opinion, the situation is such that something must be done, and that speedily.

#### BERLIN AND THE EMPEROR.

An anonymous writer who signs himself "Un Berlinois" writes a character sketch of the German Emperor, apropos of his difference with the Berlin municipality, in which he does justice to the extraordinary mixture of medieval and feudal conceptions with modern ideas which exists in the brain of his imperial majesty. Among all his predecessors, the Emperor ap-

pears to prefer as his model his grandfather, William I., whose memory he constantly invokes. There could be no greater contrast than that between the grandson and the grandfather. It has been wickedly said of William I. that if he had not been the son of a king he would have made a very good sergeant-major! At any rate, he had the gift of choosing his councilors, and of letting them have their own way, on the whole; moreover, he was exclusively Prussian, and for his title of German Emperor he did not greatly care. Now, whatever else can be said of his grandson, he is certainly not limited in his sympathies, nor is he at all inclined to underrate his imperial position, or to confine his sympathies exclusively to Prussia; least of all is he the man to leave his councilors to govern. The grandfather took little or no interest in questions of political economy, commerce, and navigation, with which his grandson is positively entranced.

#### LA NOUVELLE REVUE.

"LA NOUVELLE REVUE" contains several interesting articles, of which we have noticed elsewhere Captain Gilbert's addition to Transvaal war literature.

#### THE KAISER AND HIS ARMY.

Another military article deals, from a more or less technical point of view, with the great German maneuvers. These pages make it very clear that the German Emperor, who in a real sense commands his army, has watched every detail of the South African campaign, and that already he is doing his best to apply that knowledge in a practical manner. The writer points out, also, that for the first time in the history of the German army, during the recent maneuvers, naval battalions were brought into play; these battalions were commanded by Admiral Prince Henry of Prussia. M. Galler gives the whole text of a very interesting and lengthy telegram which shows how completely the Kaiser keeps in touch with his army. In this telegram the Emperor refers with evident pleasure to the naval battalions, pointing out how great a part the German sailors (*blaujacken*) played in the international Chinese campaign.

#### THE AFGHANISTAN QUESTION.

M. Jadot strives to prove that England and Russia are never likely to come to blows over this vexed question. His reasons for this conclusion are mostly historical, but he points out a significant fact—namely, that the whole course of the Transvaal campaign shows how easy it is for a small and determined people to hold their ground even against an immense army; consequently, Afghanistan would not be an easy nut to crack either from a Russian or a British point of view.

#### "A FAMILY PALACE."

An amusing article, which might well be longer, deals with the Elysée, the official residence of the French President, which is now becoming, according to the writer, a family palace, owing to the fact that M. Loubet is, above all things, a family man. The Elysée has gone through many phases,—thus, poor President Faure was most anxious that it should rival, if not eclipse, the great royal residences of Europe. "Under M. Thiers, the Elysée became one vast study; under MacMahon, a military club; under Grévy, a house of business; under Carnot, a church; and under Faure, a

royal theater!" Under M. Loubet's benign rule, this most charming of Paris mansions is now what it should be,—a happy mixture of a private house and of a great state department. The writer of the article, M. Guiches, pays a pretty tribute to "Madame la Présidente," who, though she has no official position as the President's consort, yet plays so great a part at the Elysée. He appeals to her to widen her social circle so as to include great writers and artists, for up to the present time the "intellectuals," save, of course, those who are also politicians, have been seen but very little at the Elysée.

Other articles in the second November number include a curious paper by M. Lobbé on "Doctors and Patients," an admirably illustrated account by M. Mandir of the sculptor Denys Puech, and some pages on Alexis Poetiekhine, who has just celebrated his jubilee as novelist and playwright.

#### LA REVUE.

IN the November numbers of *La Revue*, Dr. Romme relates the wonders worked by vaseline in restoring broken noses and beautifying unbeautiful features. "The German Novel in 1901," viewed through French spectacles, is also an interesting study. M. Henri Sienkiewicz contributes a plaintive but highly original story, "Vision Suprême." A light and amusing article deals with "le five o'clock" in the time of Louis XIV., when it was the custom for the fashionable world to unite in the afternoon, not to drink tea, but costly wines, and to feast on a profusion of extravagant and fantastic dainties.

#### ARE FRENCH POLITICIANS ILLITERATE?

On the whole—no, says M. Ernest-Charles, who has been moved to write a long article in proof of his view by the nonsense often talked about the barbarous illiteracy of French politicians. Everywhere the opinion is loudly asserted that the French Senate and Chamber of Deputies is a kind of convenient dumping-ground for all the moral and intellectual mediocrities who are a nuisance anywhere else—who hate every clever and intellectual man, because they themselves are incurable adleppates.

But, is this so? says M. Ernest-Charles. Take the Senate first. How can the charge of intellectual inferiority be brought against a body containing such a *savant* as M. Berthelot, or such talented writers as M. de Freycinet, M. Deschanel, M. Béranger, or M. Francis Charmès, the author of the political notes in the *Revue des Deux Mondes*? The culture of many French politicians may not be academically perfect; it is nevertheless that best calculated to suit the needs of those possessing it. It is not their aim and end; it is rather a useful help to them in their life of activity. The writer cites M. Bourgeois as an apt illustration of an extremely practical man, with nevertheless a keen interest in all matters appertaining to art, literature, and science. M. Ribot is immensely learned, but not greatly devoted to literature as a fine art. M. Brisson looks upon letters as frivolity; M. Waldeck-Rousseau is said to scorn them. M. Mélix could never be called a literary man; neither could M. Delcassé.

But, says the writer, this does not necessarily prove any decadence,—merely that the more and more complex problems that beset politicians require practical rather than cultured men. Nevertheless, intellectual graces must always count for much in the success of a French politician.

Running through the Deputies, M. Charles finds quite enough of the literary element. Parliament is not the dumping-ground of intellectual stupidity, but neither is it the point of union of all the greatest writers and thinkers. Here again the purely literary writers seem to give place to historians and writers on social and economic questions. M. Charles does not omit a warm tribute to Baron d'Estournelles as a careful observer of foreign politics. It is not intellectuality, but strength of character, the power to lead, that is the great want in French political life.

#### UNIVERSAL SUFFRAGE IN BELGIUM.

An interesting inquiry has been held among leading Belgian politicians as to the advisability of establishing universal suffrage there. The weight of opinion is against M. Woeste and M. Beernaert, the two heads of the Catholic party. Both consider that the present system of plural votes to married men and fathers, compulsory voting, and secrecy is acting well and could hardly be improved upon. On the contrary, M. Janson, head of the Progressives, is a convinced partisan of universal suffrage, no pluralities, and proportional representation. The editor of the *Revue de Belgique* is also an adherent of universal suffrage, provided it secures to Belgium an electoral system which faithfully reflects the opinion of the people; but, he adds, as the result of clericalism, especially in Flemish Belgium, and of lack of education (which is not compulsory), the Belgians are not capable of really expressing their wishes. Still, he thinks that universal suffrage must come.

There are two possible solutions: The Socialists, whose influence is increasing in Belgium more than anywhere, will finally get such a majority as to be able to introduce their own programme—with bloodshed, no doubt, but still effectually. Or, pluralities will continue, and the Socialists will gradually introduce some of their leaders into the ministry, make compromises with the other parties, and so introduce popular reforms.

#### SPAIN AS VIEWED BY A SPANIARD.

Nay Cardil contributes a melancholy article on "Intellectual Spain." No person of eminence in Spain but recognizes the two chief factors in Spain's misery to be too much of the priest and too much of the soldier. Not even a novel can appear without some priestly personage figuring in it. In everything, Spain sees a religious problem. Even a modern writer of distinction will hotly defend the "Holy Inquisition."

The sight of the wretched poverty of the Spanish peasants is heartrending. Many even live in caves, like animals. What they earn is *dérisoire*. Naturally, it is not surprising that every year 20,000 Spaniards depart for South America. The pastoral population is even more desperately poor than the peasants. A shepherd will live on a piece of bitter barley bread a day. In many provinces they eat no meat,—only cabbages and chestnuts.

Schoolmasters, it is complained, die of hunger in the streets, while any toreador with the least celebrity grows rich. Most teachers earn only \$100 a year, so that it is not surprising they should starve; yet with all this poverty, in no nation are the public moneys more carelessly and wastefully administered. "Our proverbial cruelty," this Spaniard continues, "which is displayed like a black blotch on the pages of our native history, is probably due to these two elements, fanaticism and ignorance—a union which begets barbarism."

Yet, in the midst of this decrepit Spain another Spain is moving—the Spain which riots in the streets, fulminates at the theater, and applauds plays against clericalism. In this new and struggling Spain lies the only hope for the Spanish people.

#### A SERMON TO AMERICAN MULTIMILLIONAIRES.

M. de Norvins finds eleven pages all too few to enumerate the sins of the multimillionaire, who, in his view, seems always an American. The women are worse than the men. They are not ashamed of jilting—"exploiting love;" they catch Stock Exchange fever, and only live for the Wall Street quotations; they are thoughtless, heartless, reckless—a lesson to the Parisian not to be like them. For a vivid picture of a modern life of drive and rush, from early morning until far into the night, nothing could be more vivid than this paper.

#### THE GERMAN MAGAZINES.

THE *Deutsche Rundschau* contains an interesting article by M. von Brandt upon the late President McKinley, President Roosevelt, and the anarchist question. He evidently believes in the anarchist conspiracy, and laments the difficulty of bringing such a thing under the power of the law. The conclusion arrived at is that much sterner measures should be employed by the United States Government to suppress people like Emma Goldman and Most, who make it their business to openly encourage the anarchist propaganda.

#### GERMANY'S INDUSTRIAL LEADERSHIP.

In the *Deutsche Revue*, Poultney Bigelow writes upon the industrial positions of Germany, England, and the United States. He begins by pointing out that England was first in the field in almost everything. The Stockton-Darlington Railway was built at a time when the possibility of making roads for coaches was being discussed in North Germany! The first steamer on the Rhine—and that a Dutch one—was in 1822, while in 1807 a steamship service had been started by Robert Fulton on the Hudson. England was the training-ground for engineers; but what German, says Mr. Bigelow, would now think of coming to England to learn anything new about mechanics or machinery—and Englishmen study all over Germany. Formerly, Americans came to Europe to learn; now it is the other way! Having learned all he can in the United States, if he wants to study further the American goes to Germany, not to England. The conclusion arrived at is apparently that England and the United States should endeavor to follow the example of Germany in educational matters as far as possible.

#### THE ISTHMIAN CANAL.

Ulrich von Hassell, in *Monatsschrift für Stadt und Land*, comments upon the newly concluded treaty concerning the Nicaragua Canal. It will take a long time to build, and not be of much use to Europe anyway. Possibly it may facilitate the growth of trade with the Fatherland and the small islands of the Pacific which are under the German flag. Japan and China will be more quickly reached by the old route through Suez. We are told a good deal about the development of the Kameruns. As regards Kiautschu—to adopt the German

spelling—it appears that the customs receipts have increased by 28 per cent.; but when the actual figures are noticed, this increase is nothing startling. It appears that the total receipts are only a paltry \$70,000 in the year.

#### ELECTRICITY IN SHEEP-SHEARING.

*Ueber Land und Meer* contains a very interesting article upon electricity in agriculture. It is illustrated by photographs of electric plows, thrashing-machines, etc., the most novel of all being the electric shearing-machine. It would not, of course, pay to have special machines for this sort of work, which occurs only once a year, but the movable motor has made it quite possible. To judge by the photograph, the sheep are very closely shorn indeed.

#### THE ITALIAN REVIEWS.

FOR English readers, the most noteworthy pronouncement in the Italian reviews of last month is undoubtedly the speech delivered at Verona, in September, to the Dante Alighieri Society, by the distinguished Senator and historian, Prof. Pasquale Villari, and reproduced in the *Nuova Antologia* (November 1), in which he deals at length with the language question in Malta. No one in the past has entertained a more generous admiration for England than Professor Villari, and even now he asserts his belief that English public opinion "cannot remain deaf to the voice of reason and blind to the evidence of facts," and that "those old and glorious traditions of liberty and justice which have been the foundation of her greatness" will triumph once more. The whole tone of the speech, coming from one of the most prominent public men in Italy, shows how deeply the Italians resent a course of action which in England has scarcely attracted public attention at all. The Senator recalls the main facts of the case; how the maintenance of their language with their religion was one of the conditions under which the Maltese accepted the English protectorate, how Italian is necessary for them in their intercourse with surrounding countries, and how bitter is the feeling aroused by Mr. Chamberlain's action. If, on the other hand, as the supporters of the government assert, the Maltese themselves wished for the change, why was it necessary to make a law at all,—why not have left the matter to the gradual process of time? And, apart from the Maltese, was it worth while, the professor asks, "to wound the pride of a nation which has always been the faithful friend of England, and which remained so while all the other countries of Europe have been displaying hostile feelings toward her?"

*Emporium* contains an excellent critical article on Rudyard Kipling, with portrait, and views of Lahore, in which he is described as "the epic poet of modern English imperialism," and as constituting with Cecil Rhodes and Chamberlain a trinity symbolical of power and gold and hymns of victory. After attempting to explain the extraordinary fascination he exercises over the majority of his readers, the author, Dr. U. Ortesi, is compelled to fall back on the judgment of the French critic, De Wyzewa, that Kipling is the most British of all British authors, and that his books are so intensely national that it takes an Englishman to appreciate them.

# THE NEW BOOKS.

## RECENT AMERICAN PUBLICATIONS.

### WORKS IN SOCIAL AND POLITICAL SCIENCE.

Several recent works emphasize important problems now facing the American people, and contribute, indirectly if not directly, to a solution of those problems. Thus, Dr. Lyman Abbott, in "The Rights of Man" (Houghton, Mifflin & Co.), traces the growth of democracy, political, industrial, religious, and educational, treating the various questions of the day in their relations to the general theme of human rights and to one another. Dr. Abbott believes that America has a great work to do among the nations, and he has faith in her capacity to work out, not only her own salvation, but the salvation of subject peoples as well. With less optimism, perhaps, but with no less firmness of purpose or clearness of vision, President Hadley traverses much of the same ground in a volume of papers and addresses entitled "The Education of the American Citizen" (Scribners). In this book, President Hadley appeals from the too common conception of political education as a mere matter of governmental mechanism to the far more essential and rational conception of an education which seeks to develop a national spirit and force which alone can keep the mechanism of our social and political life at work. Further lessons on the American democracy are contained in a brilliant and entertaining book by Prof. Hugo Münsterberg, of Harvard—"American Traits" (Houghton, Mifflin & Co.). Professor Münsterberg's view is distinctly and frankly German. His criticisms of American institutions are for that reason the more profitable reading for Americans, although the intelligent American reader will find himself now and again taking issue with them. Here and there, he will say, Professor Münsterberg has missed the truth in his observations of our social life; and yet there is such freedom from ill-nature, such obvious intention to be fair, that we can only thank the author for his comments on our national foibles and join him in the wish for a better mutual understanding between Americans and Germans.

### NEW LIGHT ON GERMAN INDUSTRIALISM.

While Professor Münsterberg is interested in comparing the educational methods of Germany and the United States, Mr. Ray Stannard Baker, the popular magazine writer, has made a journey to Germany for the express purpose of gathering new and interesting facts on German industrial life to present to American readers. Mr. Baker wasted little time on the conventional sightseeing of the ordinary tourist, but used his eyes to good purpose in the study of the German working man and captain of industry in their home life and at their daily work. He describes for us a typical scientific institution, the Physical and Technical Institute, at Charlottenburg. He also gives an entertaining account of Professor Abbe's profit-sharing system, tells how the glass and lens manufactories of Jena were created, how ships are built in the Vulcan Shipyard of Stettin, and how a modern commercial university has been developed at Leipsic. Mr. Baker's book is full of prac-

tical and helpful information of this kind—all of which is very appropriately embraced under the title "Seen in Germany." (McClure, Phillips & Co.)

A very convenient "Short History of English Commerce and Industry" has been written by Prof. L. L. Price, the English author who has already done some work in the same field. The work is largely based on the writings of Professor Ashley and Dr. Cunningham. (Longmans, Green & Co.)

### AMERICAN INDUSTRIAL TOPICS.

Two monographs on the trust question have recently appeared,—an argument on "The Control of Trusts," by Prof. John Bates Clark (Macmillan), and "Commercial Trusts," by John R. Dos Passos (Putnams), of the New York bar. Professor Clark argues for publicity of trust accounts, the prevention of railway discrimination in favor of large shippers, and legal provision against the local cutting of prices to injure rivals. This natural method of curbing the power of monopoly, he thinks, will be sufficient to protect the public, always assuming the existence of a wholesome fear of competition. Mr. Dos Passos also offers an argument in favor of natural methods of control as opposed to legislation of a drastic kind. Going into the history of legislation, he shows that it has never yet been possible for legislation to control natural laws.

"The Anthracite Coal Industry" is the subject of a valuable study by Dr. Peter Roberts (Macmillan). Dr. Roberts confines his attention chiefly to the economic aspects of the subject, describing systems for capitalization, means of transportation, relations of employees to the corporations, the development of unionism among the miners, with an account of the strike of 1900, and in general discussing the various projects for the improvement of the miner's condition and the prospects of industrial peace and prosperity throughout the anthracite region.

### SOCIOLOGY.

Prof. Franklin H. Giddings describes his volume of "Inductive Sociology" (Macmillan) as "a syllabus of methods, analyses, and classifications, and provisionally formulated laws." The book has grown out of the briefer syllabus, published in 1897, entitled "A Theory of Socialism." In the present volume there is a more definite attempt to formulate a method and to give expression to the laws of social activity. For persons not already specialists in sociology, the terminology used throughout the work will be hardly intelligible.

"Social Institutions" is the subject of a treatise by Dr. Denton J. Snider (St. Louis: Sigma Publishing Company). The institutions treated are "The Family," "Society," "The State," "The Church," and "The School." The author sets forth the origin, growth, and interconnection of these social institutions from the early psychological point of view. "Democracy versus Socialism," by Max Hirsch (Macmillan), is an examination of socialism with reference to the single tax as an alternative proposition.



Prof. Walter A. Wyckoff, the author of "The Workers," has written a series of brief narratives which are now collected under the title "A Day with a Tramp, and Other Days" (Scribners). These narratives are drawn from notes taken from an expedition made by Mr. Wyckoff ten years ago, when he made his now famous experiment at earning his living as a day-laborer, working his way, in the course of eighteen months, from Connecticut to California. These observations are interesting in so far as they reveal the thoughts and aspirations of the American working man under the various conditions in which his lot is cast.

Dr. George James Bayles has written an exceedingly useful little work entitled "Woman and the Law" (Century Company). This is not a law-book in the ordinary sense of the term, but rather a non-professional treatment of the modern law in its relations to woman. Furthermore, the book is addressed to women, and written with special reference to their needs. The subject matter of the book is divided into three parts—"Domestic Relations," "Property Relations," and "Public Relations." Under the first head, the subjects of marriage and divorce are treated, and the causes for which divorce is granted in the several States are set forth. Woman's political status in the modern state is considered under "Public Relations."

#### THE SCIENCE OF ECONOMICS.

The third and concluding volume of Prof. J. Shield Nicholson's "Principles of Political Economy" has just appeared. This work is intended to give a survey of economic principles in the light of recent advances in the application of historical and comparative methods and in mathematical analysis, and to provide an introduction to a more specific treatment of pure theory, economic history, and the economic side of social questions. In the present volume, the chapters on relative prices, rents, profits and wages, and the relations of public expenditure to taxation are the portions which may fairly lay claim to originality. (Macmillan.)

Mr. S. T. Wood has constructed on a plan of his own an excellent "Primer of Political Economy" (Macmillan). In this unpretentious little volume an attempt is made to explain the most familiar economic phenomena, especially those facts which have to do with the interchange of commodities in modern commercial life, and the reader is led on almost unconsciously to a discussion of the principles of governmental interference in production. The book is well within the comprehension of public-school pupils of grammar grades.

#### BOOKS ABOUT NATURE AND SCIENCE.

In beginning a survey of the new books relating to Nature in her manifold forms, it is a pleasure to the reviewer to have before him a new edition of that English classic, "The Natural History of Selborne," by Gilbert White, edited, with notes, by Grant Allen, and illustrated by Edmund H. New (John Lane). Alone of all books of its class produced in the eighteenth century, this work is read to-day with as much avidity as at any time in the one hundred and twelve years that have elapsed since the first edition was given to the world. It has made the quiet English village of Selborne known to the ends of the earth, and by its literary charm has won and held the interest of thousands of readers who would not under ordinary conditions have been attracted to any form of nature-study. Mr. Grant Allen's work as editor of the present edition was chiefly

confined to pointing out in notes the later conclusions of science regarding questions unsettled in Gilbert White's time and to a reversal of the distinguished naturalist's own conclusions wherever the researches of recent times have warranted such reversal. After all, however, it is not for pure science that Gilbert White is read to-day, and it is hardly conceivable that many of his readers will be seriously misled by statements that he may make on specific points, however erroneous such statements may be in the light of modern investigations. Mr. New's drawings have evidently been made with great care, and are in every respect worthy accompaniments of the text.

#### STUDIES IN PLANT LIFE.

To Mrs. Alice Morse Earle we are indebted for a delightful account of "Old-Time Gardens" (Macmillan), profusely illustrated from photographs. Mrs. Earle has made a careful study of Colonial gardens, giving special attention to the varieties of flowers and shrubs brought over from England in the seventeenth and eighteenth centuries, and tracing out the histories of these species as they became domesticated in the Northern and Southern colonies. Most readers will be surprised to learn that there are so many of the Colonial gardens surviving to the present day. Several of these have been preserved practically intact from Colonial times, and the photographs, only recently made, give us a fairly accurate notion of the appearance of these gardens a century and a half ago.

The first popular work devoted exclusively to plant life in the South is Mrs. Alice Lounsberry's "Southern Wild Flowers and Trees" (Stokes). Mrs. Ellis Rowan, who coöperated so successfully with Mrs. Lounsberry in "A Guide to the Wild Flowers" and "A Guide to the Trees," earlier books which treated in a similar way of Northern flora and wood lore, has in the present volume even excelled her own past efforts in picturing vegetable life. The plan of the work, as in the case of Mrs. Lounsberry's earlier volumes, is entirely in accord with the scientific botany of to-day. The scientific terms follow the new system of nomenclature, while many English names are given which have been learned by the author directly from the people. Mrs. Lounsberry and Mrs. Rowan made extended journeys through the mountainous regions of the South, getting in that way first-hand acquaintance with the subject matter of their most attractive book.

"A Manual of the Flora of the Northern States and Canada" has been prepared by Dr. Nathaniel Lord Britton, of the New York Botanical Garden (Holt). In this volume, not only the nomenclature, but the order of arrangement, shows many material deviations from the botanical manuals of former days. The flora itself covers more than one thousand thin pages closely printed. This is preceded by a general key to the orders and followed by a glossary of special terms, a table of abbreviations of the names of authors, a table of Latin names, and an English index of plant names.

#### CHEMISTRY AND ASTRONOMY.

President Remsen, of the Johns Hopkins University, has written "A College Text-Book of Chemistry" (Holt) intended to fill a place between his "Introduction to the Study of Chemistry" and "Inorganic Chemistry." The clearness and simplicity which have always marked Dr. Remsen's literary style are especially noticeable in the present work, even in those chapters which deal

with the more recondite branches of the general subject.

Prof. Simon Newcomb's book on "The Stars" (Putnam's) presupposes such a knowledge of astronomy as may be gained from most of the elementary text-books used, and sets forth in a popular and forcible way the recent progress of astronomical science. There are interesting chapters on "Magnitudes of the Stars," "Constellations and Star Names," "Cataloguing and Numbering the Stars," "The Spectra of the Stars," "Proper Motions of the Stars," "Variable Stars," "New Stars," "Fixed Stars," "Constitution of the Stars," "Stellar Evolution," "The Structure of the Heavens," and various other topics associated with the central theme, all of which are illuminated by Professor Newcomb's lucid method of exposition. Many astronomical photographs have been utilized in the illustration of the volume.

#### BOOKS RELATING TO ANIMALS AND BIRDS.

If the animal stories related by Mr. Ernest Seton-Thompson were not true, they would still be fascinating, but we have Mr. Seton-Thompson's word for it that they are true in every particular. He admits, however, that some liberty has been taken in ascribing to one animal the adventures of several. In the preface of his new book, "The Lives of the Hunted" (Scribners), Mr. Seton-Thompson gives some interesting information as to the part taken by Mrs. Seton-Thompson in these extremely interesting books. The stories, he says, were written by himself; all the pictures, also, including the marginals, are his own handiwork. But Mrs. Seton-Thompson, we are told, deserves full credit for choice of subjects to illustrate, ideas as to treatment, the preliminary designs for cover and title-page, and the literary revision of the text. In all of these technical essentials to book-making, this new volume, like "Wild Animals I Have Known," is a striking success.

"Camera Shots at Big Game," by A. G. Wallihan (Doubleday, Page & Co.), is an ambitious attempt to transfer to the printed page the vivid impression which the hunter receives when he encounters the elk, the antelope, the mountain sheep, the bear, and the cougar under the blue skies of Colorado. President Roosevelt contributes an introduction to Mr. Wallihan's volume, and speaks in terms of the highest praise of the photographs which make up Mr. Wallihan's collection; and certainly, as regards these particular wild animals of the West, no better authority could be found than Mr. Roosevelt. Mr. Wallihan's text descriptions are also excellent.

Prof. Vernon L. Kellogg, of Leland Stanford, Junior, University, has written an "Elementary Zoölogy" (Holt) which outlines a course of study representing three kinds of work—(1) field observations of animals; (2) laboratory work, and (3) recitation and lecture-room work. The illustrations are far superior to those which were commonly employed in works of this character only a few years ago.

#### EXTINCT SPECIES.

"Animals of the Past" is the title of an exceedingly attractive presentation of an interesting subject by Frederic A. Lucas, of the United States National Museum (McClure, Phillips & Co.). In this little volume, Mr. Lucas endeavors to tell something about a few of the more remarkable of the extinct animals which have gradually become known to the scientific men of the

present day. Some indication of the popular interest in this subject is afforded by the famous Alaskan "live-mammoth" story, which spread throughout the country, and on its appearance in the form of a contribution to one of our popular magazines was accepted by a too credulous public as solid fact. Mr. Lucas describes the best existing specimens of the various extinct species, and tells in what museums they may be found. The drawings for this book were made by Mr. Charles R. Knight and Mr. James L. Gleeson, and the work of these artists has been closely supervised by the author.

#### A MANUAL FOR HUNTERS OF WILD FOWL.

Mr. George Bird Grinnell, who has had long experience as a huntsman in the West and elsewhere, has written a valuable manual of "American Duck Shooting" (New York: Forest and Stream Publishing Company). The first part of the book is devoted to descriptions of every species of duck, goose, and swan to be found in North America, each description being accompanied by a carefully drawn portrait of the species. The second part describes different forms of wild-fowl shooting, covering the greatest possible range. In the third part, "The Art of Duck Shooting," practical directions are given as to what guns to use, how to load them, how the beginner should conduct himself in a blind, and how the various types of boats used in duck hunting can be utilized to the best advantage. The work is valuable as a book of reference to the sportsman in every part of the country.

#### DOMESTIC ANIMALS.

A sort of encyclopedia of the canine tribes has been prepared by Mr. H. W. Huntington, the late president of the National Greyhound Club of America, under the title of "The Show Dog" (Providence, R. I.: published by the author). The arrangement of the material is alphabetic. All the breeds of dogs are described from the show-ring standpoint, with suggested modes of treatment of the dog both in health and sickness. The work is well illustrated.

Miss Agnes Repplier has written a new book about cats, entitled "The Fireside Sphinx" (Houghton, Mifflin & Co.). The history of cats from their first appearance on the Nile to the present time is carefully traced in this volume. It has been illustrated in a charming manner by Miss Bonsall.

A convenient "Short History of the American Trotting and Pacing Horse" has been prepared by Mr. Henry T. Coates, the well-known Philadelphia publisher (Philadelphia: Henry T. Coates & Co.). This work contains tables of pedigrees of famous horses, with hints on the training and conditioning of horses compiled from various sources. There are appended a paper on "The American Trotting Turf in 1899 and 1900," by Mr. A. M. Gillam, and a chapter entitled "What to Do Before the Veterinary Surgeon Comes," by George Fleming, F.R.C.V.S.

#### BOOKS FOR THE HOME.

Of the new books dealing with hygiene for the home, perhaps the most important is "The Century Book for Mothers," by Dr. Leroy Milton Yale and Gustav Pollak (The Century Company). The authors have endeavored, in preparing this work, to offer what they term "a practical guide in the rearing of healthy children." As they state in the preface to the book, they have kept in mind two queries: "What ought an intelligent mother to know? And, beyond that, what would she wish to

know regarding the care of her child?" In attempting an answer to the first question, the authors have decided that the mother should know the things that go to the establishing and preserving of healthful conditions, and that she should be aided in the recognition and avoidance of disease rather than in its cure. Thus, a special emphasis has been laid on the caring for children, including the feeding, clothing, and housing. As to the second question, the writers have been largely guided by the practical questions relating to nursery life put by mothers to the editor of a magazine devoted to the care of children. In arrangement of material and method of treatment, the work is a model of its class.

Miss Marianna Wheeler, for the past ten years superintendent of the Babies' Hospital in New York City, has prepared a valuable little book entitled "The Baby: His Care and Training" (Harpers). Among the topics covered in this work are "Fresh Air and Ventilation," "The Nursery: Its Furnishings—The Nurse," "The Baby's Bath and Clothing," "Sleep and Amusement," "Infant Feeding," "Contagion—Measles and Scarlet Fever," "Diphtheria, Whooping-Cough, Mumps, and Chicken-Pox," and "Emergencies."

Mrs. Florence Hull Winterburn has written a new volume in the "Parents' Library" (The Baker & Taylor Company) entitled "The Children's Health." This is an attempt to supply the need of mothers for a simple little manual containing the laws of health as based upon evolution, and giving broad outlines instead of pet theories of the author. The scope of the work is indicated by some of the chapter-headings: "The Child and His Atmosphere," "Educating the Nerves," "Nature's Sweet Restorer," "Nutriment and Growth," "The Relation of Grace to Life."

#### HEALTH AND HYGIENE.

"First Principles of Nursing," by Anne R. Manning (Boston: Little, Brown & Co.), is an outgrowth of the author's experience, and practice as a trained nurse. The book is an attempt to make known the first principles of nursing, for the benefit of women who frequently make use of such knowledge in taking care of slight illnesses in their own families and in cases of emergencies and accidents.

"First Aid to the Injured and Sick" is "an ambulance handbook" prepared by two English surgeons, Dr. F. J. Warwick and Dr. A. C. Tunstall (Philadelphia: W. B. Saunders & Co.). Beginning with a description of the construction of the human body, the authors proceed to explain the circulation of the blood and the processes of respiration, digestion, and excretion, concluding the first part of the treatise with an account of the nervous system. The second part is devoted to practical directions for the rendering of aid in emergencies, such as the application of bandages, the treatment of hemorrhage, wounds and their immediate treatment, artificial respiration, insensibility, and fits, burns, scalds, and so forth. The treatment is concise, and the illustrations are good.

Dr. George M. Price's "Handbook on Sanitation" (New York: John Wiley & Sons) is an excellent manual of the subject adapted for the use of students, physicians, health inspectors, and all persons who have to do with the hygienic conditions of cities, towns, and villages. It does not pretend to be an exhaustive treatise on sanitation, but it gives clear and practical suggestions, and is based on a most thorough and up-to-date

study of the whole question. Dr. Price is medical sanitary inspector of the Health Department of New York City, and has had much experience, especially in the inspection of tenement-houses.

A revised and enlarged edition of Sir Henry Thompson's little work on "Diet in Relation to Age and Activity" (Frederick Warne & Co.) has recently appeared. The author has now entered on his eighty-second year, and is able to offer many useful hints relating to the habits of persons in advanced life.

#### OF SPECIAL INTEREST TO WOMEN.

Two excellent books of suggestions rather than of rules regarding the details of ordinary social life are the "Encyclopedia of Etiquette," by Emily Holt (McClure, Phillips & Co.), and Mrs. Burton Kingsland's "Etiquette for All Occasions" (Doubleday, Page & Co.). Each of these books is excellent in its way, and the reader who permits himself to be guided by them cannot go far astray. The one first mentioned will, perhaps, be found more helpful by people living outside the populous centers.

In a book which he calls "Her Royal Highness—Woman, and His Majesty—Cupid" (The Abbey Press), Mr. Max O'Rell, the clever cosmopolitan newspaper correspondent, sets forth his views of marriage and domestic happiness, and, in his epigrammatic style, gives much good advice.

Miss Heloise Edwina Hersey, who has had much experience as conductor of a private school for girls, has written a series of letters which are brought together in a single volume under the title "To Girls" (Boston: Small, Maynard & Co.). Miss Hersey writes about education, social relations, and personal conduct. It is said that this book has been adopted as a part of the daily reading at the morning exercises in the Girls' Latin School in Boston. The book is adapted to the needs of the home-making girl as well as to those of the girl who means to go into a profession.

Miss Myrtle Reed, author of "Love Letters of a Musician," has written a series of essays which have been collected in "The Spinster Book" (Putnams), having chiefly to do with men as regarded from a woman's point of view.

#### THE TRAINING OF CHILDREN.

"The Mind of a Child," by Ennis Richmond (Longmans), is a serious study addressed especially to parents, and is concerned with the moral and spiritual aspects of child-development. It is a stimulating and thought-provoking book, and reveals a knowledge of child nature that could never have been acquired from books.

It may be news to not a few of our readers that children are now taught in schools to cook, sweep, make beds, and wash dishes; but it is a fact that this kind of training is actually given children in a methodical manner in New York City and in some other cities, and the whole system has been named the "Kitchen Garden," including object-lessons in housework for children from six to twelve years of age. A complete manual of this system, "How to Teach Kitchen Garden," by Emily Huntington, has recently been published (Doubleday, Page & Co.). The volume is illustrated from photographs of actual classes at work. Appropriate music is also included in the volume, for the system is really a combination of songs, exercises, and plays.

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- London Churches, Sir Christopher Wren's, R. D. Cleveland, NEng.
- Lorna Doone, Land of, H. W. Mabie, Out.
- Lucretius and the Evolution Idea, W. L. Poteat, PopS.
- Lynch, Judge, The Real, T. W. Page, Atlant.
- Machiavelli, Political Theory of, W. A. Dunning, IntM.
- McKinley, President William, E. Tallichet, BU; J. A. Kasson, Cent.
- Madagascar, Agricultural Future of, A. Muntz and E. Rousseaux, RDM, December 1.
- Maeterlinck and Music, E. Newman, Atlant.
- Mansfield, Lord, J. Buchan, Atlant.
- Manufacturers, American, and the Isthmian Canal, C. A. McGray, NatM.
- Manufacturers, Foreign Markets for Our, O. P. Austin, NatM.
- Mare Island, Social Life at, Ella M. Hammond, Over.
- Markham, Edwin, and His Work, H. Maxim, AngA.
- Marriage and Modern Civilization, W. S. Lilly, NineC.
- Massachusetts Population, Fecundity of the, R. R. Kuczynski, QJ Econ, November.
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- Military Novelties, J. Scott, Str.
- Milk Supply of New York City, H. D. Chapin, San.
- Mind: Deaf, Kindergarten Work for the, Charlotte L. Morgan, Kind.
- Miracles, Gospel, and Modern Thought, J. B. Thomas, Hom.
- Missions:
- Brummana Missionary Conference, F. B. Meyer, MisR.
  - Chalmers, James, the Apostle of New Guinea, E. C. Storrow, MisR, November.
  - Child, The, the Heathen, and the Church, J. W. Conklin, MisR.
  - China, Missions in, J. L. Whiting, MisR.
  - Ecuador, the Republic of the Sacred Heart, C. S. Deweiler, MisR, November.
  - India, Self-Governing Orphanage in, L. S. Gates, MisH.
  - Jews of Russia, S. H. Wilkinson, MisR.
  - Malaysia Mission Field, B. F. West, MisR, November.
  - Missionary Unity, Movement of 1901 Toward, J. T. Gracey, MisR.
  - Moravian Missionary Work, A. T. Pierson, MisR.
  - Moslem Homes, Glimpse of, G. E. Post, MisR.
  - Moslem Women, Mrs. S. G. Wilson, MisR.
  - New Guinea, "Tamate," the Hero of, G. Robson, MisR, November.
  - Northwest, Home Missions in the, W. S. Holt, MisR, November.
  - Obligation and Call to Missionary Work, J. L. Humphrey, MisR, November.
  - Rescue Work, Bed-Rock Principles of, S. H. Hadley, MisR, November.
  - South India Protestant Missions, J. P. Jones, MisH.
  - Turkish Empire, Christian Forces in the—III., E. Riggs, MisR.
  - Young People, Missionary Meetings for, V. F. Penrose, MisR, November.
- Monetary System and Business Conditions, BankNY, November.
- Monroe Doctrine: Shall It Be Modified? W. Wellman, NAR.
- Monroe Doctrine, Some Aspects of the, S. Brooks, Fort.
- Monuments, Ancient, Freshest Light from the, A. H. Sayce, Hom, November.
- Moose, The: Where and How It Lives, A. J. Stone, O.
- Mother and Child, H. C. Potter, Harp.
- Music in Theological Education, W. S. Pratt, Hart, November.
- Music, Programme—II., E. B. Hill, Mus.
- Mutiny, The Great, Tale of the—XII., W. H. Fitchett, Corn.
- Naples During the Terror, M. d'Avaya, NA, November 1.
- Napoleon, Fouché and, L. Fingaud, RDM, November 15.
- National Defense Forces of Great Britain and the United States, C. S. Clark, USM.
- National Guard and Its Value, T. Wilhelm, Over.
- Nature: Seeing Things Outdoors, S. C. Schmucker, LHJ.
- Navy, British, Fire Control in the, USM.
- Navy: Making a Man of War's Man, S. Vail, JunM.
- Navy Yards, Building of Ships in the, G. J. Campbell, Jr., Over.
- New York City:
- Municipal Campaign, Scenes from the, L. Denison, WW.
  - Municipal Policy, New, G. Gunton, Gunt.
  - New York City in Winter, Anne O'Hagan, JunM.
  - Rebuilding of New York, M. G. Cunniff and A. Goodrich, WW.
  - Tammany Hall, S. Brooks, MonR, November.
  - Women, Young, Evening Recreations and Occupations for, Mrs. A. S. Richardson, Home.
- Newfoundlanders of the Outports, N. Duncan, O.
- Newspaper Head Lines, N. Babcock, JunM.
- Newspapers of Ancient Rome, E. C. Lovatelli, NA, November 1.
- Nile Dam at Assouan, A. J. Liversedge, CasM.
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- Nobel Prizes, Distribution of the, RRL.
- Nurseries of the Twentieth Century, E. H. Cooper, MonR, November.
- Opera, Early, in America, C. D. Hess, Cos.
- "Origin of Species," Reception of the, PopS.
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- Palestine, Christian and Infidel in—II., D. C. Monroe, IntM.
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- Pan-American Exposition, Failure of the, Can.
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- Parenthood, Ella W. Wilcox, Cos.
- Paris Revolution of 1830, A Woman in the, Harp.
- Park, Proposed Appalachian, N. S. Shaler, NAR.
- Pension System, Military, of Tennessee, W. H. Glasson, Annals.
- Perkins, George W., W. J. Boies, WW.
- Persian Gulf, an Asiatic Mediterranean—II., P. Martel, BU.
- Personal Liberty, Bearings of Limitation of, S. F. Scovel, Hom.

- Petroleum in California, W. L. Watts, CasM.  
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   Animals, Wild, Camera Shots at, T. Roosevelt, WW.  
   Farm, Photographing on the, W. I. L. Adams, AA.  
   Fishes, Living, Photographing, H. V. Letkemann, APB.  
   Genre Pictures, R. Melville, WPM.  
   Illumination of Dark and Light Objects, A. T. Newton, WPM.  
   Interiors, Photographing of, H. McB. Johnstone, PhoT.  
   Landscape Photography, Phases of, A. H. Hinton, PhoT.  
   Miniatures, Carine Cadby, WPM.  
   Negatives, Faulty, Helping, J. A. Tennant, WPM.  
   Ozotype, Lessons in—II, T. Manly, PhoT.  
   "Papier Sepia," Preparation and Use of, R. Namias, PhoT.  
   Platinotype Papers, Red and Blue Tones with, J. H. McCorkle, PhoT.  
   Platinum Prints, Brown, J. Joë, APB.  
   Sun as a Painter, PhoT.  
 Physical Laboratory, National, of Great Britain, R. T. Glazebrook, PopS.  
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 Poles, Search for the, Mrs. L. C. Van Voorhis, FrL.  
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 Preacher's Use of Illustrations, J. Parker, Hom, November.  
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 Publicity as a Means of Social Reform, W. H. Baldwin, Jr., NAR.  
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   Boer War to Date, A. Sangree, Cos; J. Ralph, WW.  
   Child-Settlers for South Africa, F. Stevenson, NinC.  
   Lessons from the South African War, F. J. Graves, USM.  
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   South Africa, War, Captain Gilbert, Nou, November 15.  
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 Styria, Two Sanctuaries in, D. M. Barrett, Cath.  
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 Tahiti, Diary of a Voyage to, in 1901, S. P. Langley, NatGM.  
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 Trolley Lines, Long, Making, W. F. McClure, WW.  
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 Worship, Genesis of, C. P. Gasquoine, West.  
 Yale, The Making of, E. Oviatt, NEng.  
 Yukon River Tragedy, H. J. Woodside, Can.  
 Zola, Emile: In the Days of My Youth, Bkman.

## Abbreviations of Magazine Titles used in the Index.

[All the articles in the leading reviews are indexed, but only the more important articles in the other magazines.]

Ains.	Ainslee's Magazine, N. Y.	Ed.	Education, Boston.	NEng.	New England Magazine, Bos- ton.
ACQR.	American Catholic Quarterly Review, Phila.	EdR.	Educational Review, N. Y.	NineC.	Nineteenth Century, London.
AHR.	American Historical Review, N. Y.	Eng.	Engineering Magazine, N. Y.	NAR.	North American Review, N. Y.
AJS.	American Journal of Soci- ology, Chicago.	EM.	España Moderna, Madrid.	Nou.	Nouvelle Revue, Paris.
AJT.	American Journal of The- ology, Chicago.	Ev.	Everybody's Magazine, N. Y.	NA.	Nuova Antologia, Rome.
ALR.	American Law Review, St. Louis.	Fort.	Fortnightly Review, London.	OC.	Open Court, Chicago.
AMonM.	American Monthly Magazine, Washington, D. C.	Forum.	Forum, N. Y.	O.	Outing, N. Y.
AMRR.	American Monthly Review of Reviews, N. Y.	Frl.	Frank Leslie's Monthly, N. Y.	Out.	Outlook, N. Y.
ANat.	American Naturalist, Boston.	Gent.	Gentleman's Magazine, Lon- don.	Over.	Overland Monthly, San Fran- cisco.
AngA.	Anglo-American Magazine, N. Y.	GBag.	Green Bag, Boston.	PMM.	Pall Mall Magazine, London.
Annals.	Annals of the American Acad- emy of Pol. and Soc. Science, Phila.	Gunt.	Guntton's Magazine, N. Y.	Pear.	Pearson's Magazine, N. Y.
APB.	Anthony's Photographic Bul- letin, N. Y.	Harp.	Harper's Magazine, N. Y.	Phil.	Philosophical Review, N. Y.
Arch.	Architectural Record, N. Y.	Hart.	Hartford Seminary Record, Hartford, Conn.	PhoT.	Photographic Times, N. Y.
Arena.	Arena, N. Y.	Home.	Home Magazine, N. Y.	PL.	Poet-Lore, Boston.
AA.	Art Amateur, N. Y.	Hom.	Homiletic Review, N. Y.	PSQ.	Political Science Quarterly, Boston.
Al.	Art Interchange, N. Y.	IJE.	International Journal of Ethics, Phila.	PopA.	Popular Astronomy, North- field, Minn.
AJ.	Art Journal, London.	IntM.	International Monthly, Bur- lington, Vt.	PopS.	Popular Science Monthly, N. Y.
Art.	Artist, London.	IntS.	International Studio, N. Y.	PRR.	Presbyterian and Reformed Review, Phila.
Atlant.	Atlantic Monthly, Boston.	JMSI.	Journal of the Military Ser- vice Institution, Governor's Island, N. Y. H.	PQ.	Presbyterian Quarterly, Char- lotte, N. C.
Bad.	Badminton, London.	JPEcon.	Journal of Political Economy, Chicago.	QJ Econ.	Quarterly Journal of Econom- ics, Boston.
BankL.	Bankers' Magazine, London.	JunM.	Junior Munsey, N. Y.	QR.	Quarterly Review, London.
BankNY.	Bankers' Magazine, N. Y.	Kind.	Kindergarten Magazine, Chi- cago.	RasN.	Rassegna Nazionale, Florence.
Bib.	Biblical World, Chicago.	KindR.	Kindergarten Review, Spring- field, Mass.	RefS.	Réforme Sociale, Paris.
BibS.	Bibliotheca Sacra, Oberlin, O.	Krin.	Kringsjan, Christiania.	RRL.	Review of Reviews, London.
BU.	Bibliothèque Universelle, Lau- sanne.	LHJ.	Ladies' Home Journal, Phila.	RRM.	Review of Reviews, Mel- bourne.
Black.	Blackwood's Magazine, Edin- burgh.	LeisH.	Leisure Hour, London.	RDM.	Revue des Deux Mondes, Paris
BB.	Book Buyer, N. Y.	Lipp.	Lippincott's Magazine, Phila.	RGEn.	Revue Générale, Brussels.
Bkman.	Bookman, N. Y.	LQ.	London Quarterly Review, London.	RPar.	Revue de Paris, Paris.
BP.	Brush and Pencil, Chicago.	Long.	Longman's Magazine, London.	RPP.	Revue Politique et Parlemen- taire, Paris.
Can.	Canadian Magazine, Toronto.	Luth.	Lutheran Quarterly, Gettys- burg, Pa.	RRP.	Revue des Revues, Paris.
Cass.	Cassell's Magazine, London.	McCl.	McClure's Magazine, N. Y.	RPL.	Rivista Politica e Letteraria, Rome.
CasM.	Cassier's Magazine, N. Y.	Mac.	Macmillan's Magazine, Lon- don.	Ros.	Rosary, Somerset, Ohio.
Cath.	Catholic World, N. Y.	MA.	Magazine of Art, London.	San.	Sanitarian, N. Y.
Cent.	Century Magazine, N. Y.	MRN.	Methodist Review, Nashville.	School.	School Review, Chicago.
Cham.	Chambers' Journal, Edin- burgh.	MRNY.	Methodist Review, N. Y.	Scrib.	Scribner's Magazine, N. Y.
Chaut.	Chautauquan, Cleveland, O.	Mind.	Mind, N. Y.	Sr.	Sevance Review, N. Y.
Cons.	Conservative Review, Wash- ington.	MisH.	Missionary Herald, Boston.	SocS.	Social Service, N. Y.
Contem.	Contemporary Review, Lon- don.	MisR.	Missionary Review, N. Y.	Str.	Strand Magazine, London.
Corn.	Cornhill, London.	Mod.	Modern Culture, Cleveland, O.	Temp.	Temple Bar, London.
Cos.	Cosmopolitan, N. Y.	Mon.	Monist, Chicago.	USM.	United Service Magazine, London.
Crit.	Critic, N. Y.	MonR.	Monthly Review, N. Y.	West.	Westminster Review, London.
Deut.	Deutsche Revue, Stuttgart.	MunA.	Municipal Affairs, N. Y.	WWM.	Wide World Magazine, Lon- don.
Dial.	Dial, Chicago.	Mun.	Munsey's Magazine, N. Y.	WPM.	Wilson's Photographic Maga- zine, N. Y.
Dub.	Dublin Review, Dublin.	Mus.	Music, Chicago.	WW.	World's Work, N. Y.
Edin.	Edinburgh Review, London.	NatGM.	National Geographic Maga- zine, Washington, D. C.	Yale.	Yale Review, New Haven.
		NatM.	National Magazine, Boston.	YM.	Young Man, London.
		NatR.	National Review, London.	YW.	Young Woman, London.
		NC.	New-Church Review, Boston.		

